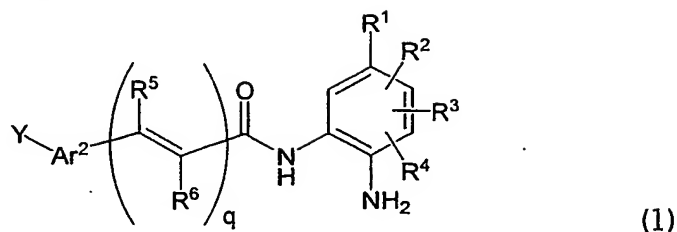


**We claim:**

1. A histone deacetylase inhibitor of formula (1):



or a pharmaceutically acceptable salt thereof, wherein

Ar<sup>2</sup> is a saturated or mono- or poly- unsaturated C<sub>5</sub>-C<sub>14</sub>-mono- or fused poly- cyclic hydrocarbonyl, optionally containing one, two, three, or four annular heteroatoms per ring optionally substituted with one or more groups selected from C<sub>1</sub>-C<sub>7</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>7</sub>-alkoxy, halo, and amino, provided that an annular O or S is not adjacent to another annular O or S;

R<sup>5</sup> and R<sup>6</sup> are independently selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>7</sub>-alkyl, aryl, and aralkyl;

R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are independently selected from the group consisting of hydrogen, halogen, -NH<sub>2</sub>, nitro, hydroxy, aryl, heterocyclyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, heteroaryl, C<sub>1</sub>-C<sub>7</sub>-alkyl, haloalkyl, C<sub>1</sub>-C<sub>7</sub>-alkenyl, C<sub>1</sub>-C<sub>7</sub>-alkynyl, C<sub>1</sub>-C<sub>7</sub>-acyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-aryloxy, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfanyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfinyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfonyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylaminosulfonyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylamine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkenyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-R<sup>9</sup>, C<sub>1</sub>-C<sub>7</sub>-alkenyl-R<sup>9</sup> wherein R<sup>9</sup> is hydrogen, hydroxy, amino, C<sub>1</sub>-C<sub>7</sub>-alkyl or C<sub>1</sub>-C<sub>7</sub>-alkoxy;

q is 0 or 1;

R<sup>1</sup> is a mono-, bi-, or tri-cyclic aryl or heteroaryl, each of which is optionally substituted;

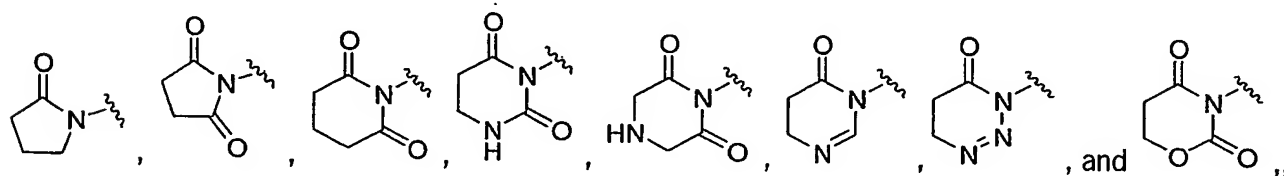
Y is any pharmaceutically acceptable chemical moiety consisting of 1 to 50 atoms; and provided that

when R<sup>1</sup> is N-imidazolyl, R<sup>2</sup>-R<sup>4</sup> are H, q is 0, and Ar<sup>2</sup> is pyridine, Y is not Cl; and

when R<sup>1</sup> is p-aminophenyl, R<sup>2</sup>-R<sup>4</sup> are H, q is 0, and Ar<sup>2</sup> is phenyl, Y is not H.

2. The compound according to claim 1 wherein R<sup>1</sup> is phenyl, naphthyl, anthracenyl, or fluorenyl.
3. The compound according to claim 1 wherein R<sup>1</sup> is furanyl or thienyl.
4. The compound according to claim 2 wherein R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are all -H.

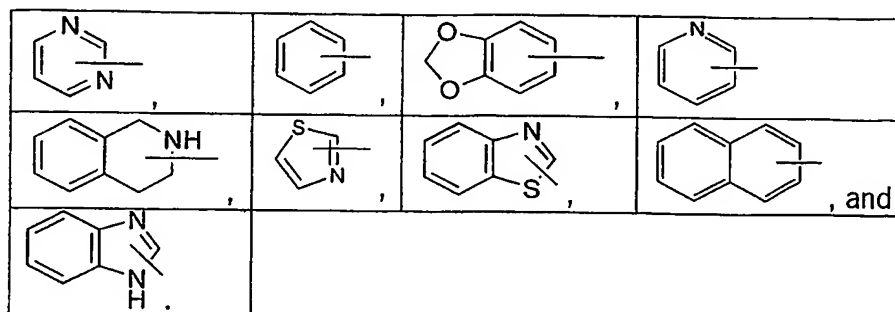
5. The compound according to claim 3 wherein  $R^2$ ,  $R^3$ , and  $R^4$  are all  $-H$ .
6. The compound according to claim 1 wherein  $Y$  is  $Cy^2-X^1$ - and  $Cy^2$  is hydrogen, cycloalkyl, aryl, heteroaryl, or heterocyclyl, each of which is optionally substituted and each of which is optionally fused to one or two aryl or heteroaryl rings, or to one or two saturated or partially unsaturated cycloalkyl or heterocyclic rings, and wherein any of the aforementioned rings are optionally substituted; and  $X^1$  is selected from the group consisting of a covalent bond,  $M^1-L^2-M^1$ , and  $L^2-M^2-L^2$  wherein  $L^2$ , at each occurrence, is independently selected from the group consisting of a chemical bond,  $C_0-C_4$ -hydrocarbyl,  $C_0-C_4$ -hydrocarbyl-(NH)- $C_0-C_4$ -hydrocarbyl,  $C_0-C_4$ -hydrocarbyl-(S)- $C_0-C_4$ -hydrocarbyl, and  $C_0-C_4$ -hydrocarbyl-(O)- $C_0-C_4$ -hydrocarbyl, provided that  $L^2$  is not a chemical bond when  $X^1$  is  $M^1-L^2-M^1$ ;  $M^1$ , at each occurrence, is independently selected from the group consisting of  $-O-$ ,  $-N(R^7)-$ ,  $-S-$ ,  $-S(O)-$ ,  $S(O)_2-$ ,  $-S(O)_2N(R^7)-$ ,  $-N(R^7)-S(O)_2-$ ,  $-C(O)-$ ,  $-C(O)-NH-$ ,  $-NH-C(O)-$ ,  $-NH-C(O)-O-$  and  $-O-C(O)-NH-$ ,  $-NH-C(O)-NH-$ ,  $R^7$  is selected from the group consisting of hydrogen,  $C_1-C_6$ -hydrocarbyl, aryl, aralkyl, acyl,  $C_0-C_6$ -hydrocarbyl-heterocyclyl, and  $C_0-C_6$ -hydrocarbyl-heteroaryl, wherein the hydrocarbyl moieties are optionally substituted with  $-OH$ ,  $-NH_2$ ,  $-N(H)CH_3$ ,  $-N(CH_3)_2$ , or halo; and  $M^2$  is selected from the group consisting of  $M^1$ , heteroarylene, and heterocyclylene, either of which rings optionally is substituted.
7. The compound according to claim 6, wherein  $X^1$  is selected from the group consisting of a  $-N(Z)-C_0-C_7$ -alkyl-,  $-O-C_0-C_7$ -alkyl-,  $-C(H)=CH-C_0-C_7$ -alkyl-,  $-S-C_0-C_7$ -alkyl-, or  $-C_1-C_7$ -alkyl-, wherein  $Z$  is  $-H$  or  $-C_1-C_7$ -alkyl- optionally substituted with  $-OH$ ,  $-NH_2$ , or halo.
8. The compound according to claim 6, wherein  $X^1$  is selected from methylene, aminomethyl, and thiomethyl.
9. The compound according to claim 6, wherein  $Cy^2$  is selected from



each of which optionally is substituted and optionally is fused to one or more aryl rings.

10. The compound according to claim 6 wherein  $Cy^2$  is aryl or heteroaryl, each optionally substituted.
11. The compound according to claim 6 wherein  $Cy^2$  is phenyl, pyrimidinyl, benzoimidazolyl or benzothiazolyl, each of which is optionally substituted.
12. The compound according to claim 11 wherein  $Cy^2$  has from one and three substituents independently selected from the group consisting of  $C_1$ - $C_7$ -alkoxy, halo, di- $C_1$ - $C_7$ -alkylamino- $C_1$ - $C_7$ -alkoxy and heteroaryl.
13. The compound according to claim 12 wherein the substituents are selected from methoxy, fluoro, chloro, pyridinyl and dimethylamino-ethoxy.
14. The compound according to claim 13 wherein  $Cy^2$  is phenyl substituted with one to three  $CH_3O$ -.
15. The compound according to claim 6 wherein Y is  $(V'-L^4)_t-V-L^3$ , and  
 $L^3$  is a direct bond,  $-C_1$ - $C_6$ -hydrocarbyl,  $-(C_1-C_3\text{-hydrocarbyl})_{m1}-X'-(C_1-C_3\text{-hydrocarbyl})_{m2}$ ,  $-NH-(C_0-C_3\text{-hydrocarbyl})$ ,  $(C_1-C_3\text{-hydrocarbyl})-NH$ -, or  $-NH-(C_1-C_3\text{-hydrocarbyl})-NH$ -;  
 $m1$  and  $m2$  are independently 0 or 1;  
 $X'$  is  $-N(R^{21})$ -,  $-C(O)N(R^{21})$ -,  $N(R^{21})C(O)$ -,  $-O$ -, or  $-S$ -;  
 $R^{21}$  is  $-H$ ,  $V''-(C_1-C_6\text{-hydrocarbyl})_a$ ;  
 $L^4$  is  $(C_1-C_6\text{-hydrocarbyl})_a-M-(C_1-C_6\text{-hydrocarbyl})_b$ ;  
 $a$  and  $b$  are independently 0 or 1;  
 $M$  is  $-NH$ -,  $-NHC(O)$ -,  $-C(O)NH$ -,  $-C(O)$ -,  $-SO_2$ -,  $-NHSO_2$ -, or  $-SO_2NH$ -.  
 $V$ ,  $V'$ , and  $V''$  are independently selected from cycloalkyl, heterocyclyl, aryl, and heteroaryl;  
 $t$  is 0 or 1.
16. The compound according to claim 15 wherein Y is  $V-L^3$  and  
 $L^3$  is  $-NH-CH$ - or  $-CH-NH$ -;  
 $V$  is phenyl optionally substituted with from 1 to 3 moieties independently selected from halo, hydroxy,  $C_1$ - $C_6$ -hydrocarbyl,  $C_1$ - $C_6$ -hydrocarbyl-oxy or -thio (particularly methoxy or methylthio), wherein each of the hydrocarbyl moieties are optionally substituted with one or more moieties independently selected from halo, nitroso, amino, sulfonamido, and cyano.

17. The compound according to claim 16 wherein V is an optionally substituted ring moiety selected from:



18. The compound according to claim 6 wherein

Cy<sup>2</sup> is cycloalkyl, aryl, heteroaryl, or heterocyclyl, each of which optionally is substituted, and each of which optionally is fused to one or more aryl or heteroaryl rings, or to one or more saturated or partially unsaturated cycloalkyl or heterocyclic rings, each of which rings optionally is substituted, provided that when Cy<sup>2</sup> is a cyclic moiety having -C(O)-, -C(S)-, -S(O)-, or -S(O)<sub>2</sub>- in the ring, then Cy<sup>2</sup> is not additionally substituted with a group comprising an aryl or heteroaryl ring; and

X<sup>1</sup> is selected from the group consisting of a chemical bond, L<sup>3</sup>, W<sup>1</sup>-L<sup>3</sup>, L<sup>3</sup>-W<sup>1</sup>, W<sup>1</sup>-L<sup>3</sup>-W<sup>1</sup>, and L<sup>3</sup>-W<sup>1</sup>-L<sup>3</sup>, wherein

W<sup>1</sup>, at each occurrence, is S, O, or N(R<sup>9</sup>), where R<sup>9</sup> is selected from the group consisting of hydrogen, alkyl, aryl, and aralkyl; and

L<sup>3</sup> is C<sub>1</sub>-C<sub>4</sub> alkylene, C<sub>2</sub>-C<sub>4</sub> alkenylene, or C<sub>2</sub>-C<sub>4</sub> alkynylene.

19. The compound according to claim 6 wherein Y is selected from:

- A<sub>1</sub>-L<sub>1</sub>-B<sub>1</sub>-, wherein A<sub>1</sub> is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein L<sub>1</sub> is -(CH<sub>2</sub>)<sub>0-1</sub>NH(CH<sub>2</sub>)<sub>0-1</sub>-, -NHC(O)-, or -NHCH<sub>2</sub>-; and wherein B<sub>1</sub> is phenyl or a covalent bond;
- A<sub>2</sub>-L<sub>2</sub>-B<sub>2</sub>-, wherein A<sub>2</sub> is CH<sub>3</sub>(C=CH<sub>2</sub>)-, optionally substituted cycloalkyl, optionally substituted alkyl, or optionally substituted aryl; wherein L<sub>2</sub> is -C≡C-; and wherein B<sub>2</sub> is a covalent bond;
- A<sub>3</sub>-L<sub>3</sub>-B<sub>3</sub>-, wherein A<sub>3</sub> is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein L<sub>3</sub> is a covalent bond; and wherein B<sub>3</sub> is -CH<sub>2</sub>NH-;

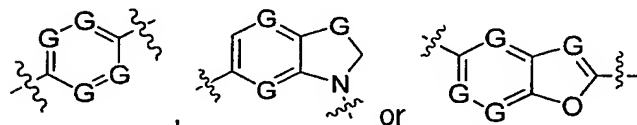


- d)  $A_4-L_4-B_4$ , wherein  $A_4$  is an optionally substituted aryl; wherein  $L_4$  is  $-NHCH_2-$ ; and wherein  $B_4$  is a thienyl group;
- e)  $A_5-L_5-B_5$ , wherein  $A_5$  is an optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_5$  is a covalent bond; and wherein  $B_5$  is  $-SCH_2-$ ;
- f) morpholinyl- $CH_2-$
- g) optionally substituted aryl;
- h)  $A_6-L_6-B_6$ , wherein  $A_6$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_6$  is a covalent bond; and wherein  $B_6$  is  $-NHCH_2-$ ;
- i)  $A_7-L_7-B_7$ , wherein  $A_7$  is an optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_7$  is a covalent bond; and wherein  $B_7$  is  $-CH_2-$ ;
- j) optionally substituted heteroaryl or optionally substituted heterocyclyl;
- k)  $A_8-L_8-B_8$ , wherein  $A_8$  is optionally substituted phenyl; wherein  $L_8$  is a covalent bond; and wherein  $B_8$  is  $-O-$ ;
- l)  $A_9-L_9-B_9$ , wherein  $A_9$  is an optionally substituted aryl; wherein  $L_9$  is a covalent bond; and wherein  $B_9$  is a furan group;
- m)  $A_{10}-L_{10}-B_{10}$ , wherein  $A_{10}$  is an optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{10}$  is  $-CH(CH_2CH_3)-$ ; and wherein  $B_{10}$  is  $-NHCH_2-$ ;
- n)  $A_{11}-L_{11}-B_{11}$ , wherein  $A_{11}$  is an optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{11}$  is a covalent bond; and wherein  $B_{11}$  is  $-OCH_2-$ ;
- o)  $A_{12}-L_{12}-B_{12}$ , wherein  $A_{12}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{12}$  is  $-NHC(O)-$ ; and wherein  $B_{12}$  is  $-N(\text{optionally substituted aryl})CH_2-$ ;
- p)  $A_{13}-L_{13}-B_{13}$ , wherein  $A_{13}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{13}$  is a covalent bond; and wherein  $B_{13}$  is  $-NHC(O)-$ ;
- q)  $A_{14}-L_{14}-B_{14}$ , wherein  $A_{14}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{14}$  is  $-NHC(O)(\text{optionally substituted heteroaryl})-$ ; and wherein  $B_{14}$  is  $-S-S-$ ;
- r)  $F_3CC(O)NH-$ ;

- s)  $A_{15}-L_{15}-B_{15}$ -, wherein  $A_{15}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{15}$  is  $-(CH_2)_{0-1}NH$ (optionally substituted heteroaryl)-; and wherein  $B_{15}$  is  $-NHCH_2$ -;
  - t)  $A_{16}-L_{16}-B_{16}$ -, wherein  $A_{16}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{16}$  is a covalent bond; and wherein  $B_{16}$  is  $-N$ (optionally substituted alkyl) $CH_2$ -; and
  - u)  $A_{17}-L_{17}-B_{17}$ -, wherein  $A_{17}$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $L_{17}$  is a covalent bond; and wherein  $B_{17}$  is  $-(\text{optionally substituted aryl-}CH_2)_2N$ -.
20. The compound according to claim 6 wherein Y is selected from:
- a)  $D_1-E_1-F_1$ -, wherein  $D_1$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_1$  is  $-CH_2$ - or a covalent bond; and wherein  $F_1$  is a covalent bond;
  - b)  $D_2-E_2-F_2$ -, wherein  $D_2$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_2$  is  $-NH(CH_2)_{0-2}$ -; and wherein  $F_2$  is a covalent bond;
  - c)  $D_3-E_3-F_3$ -, wherein  $D_3$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_3$  is  $-(CH_2)_{0-2}NH$ -; and wherein  $F_3$  is a covalent bond;
  - d)  $D_4-E_4-F_4$ -, wherein  $D_4$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_4$  is  $-S(CH_2)_{0-2}$ -; and wherein  $F_4$  is a covalent bond;
  - e)  $D_5-E_5-F_5$ -, wherein  $D_5$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_5$  is  $-(CH_2)_{0-2}S$ -; and wherein  $F_5$  is a covalent bond; and
  - f)  $D_6-E_6-F_6$ -, wherein  $D_6$  is an optionally substituted aryl, optionally substituted heteroaryl or optionally substituted heterocyclyl; wherein  $E_6$  is  $-NH(CH_2)_{0-2}NH$ -; and wherein  $F_6$  is a covalent bond.

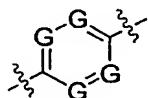
21. The compound according to claim 2 wherein  $R^2$  to  $R^4$  are independently hydrogen,  $-NH_2$ , nitro, furanyl, chloro, fluoro, butyl, trifluoromethyl, bromo, thienyl, phenyl,  $-CHCHC(O)NH_2$ ,  $-C\equiv CCH_2R^9$  wherein  $R^9$  is hydrogen,  $C_1$ - $C_7$ -alkyl, hydroxy, amino, or  $C_1$ - $C_7$ -alkoxy.
22. The compound according to claim 3 wherein  $R^2$  to  $R^4$  are independently hydrogen,  $-NH_2$ , nitro, furanyl, chloro, fluoro, butyl, trifluoromethyl, bromo, thienyl, phenyl,  $-CHCHC(O)NH_2$ ,  $-C\equiv CCH_2R^9$  wherein  $R^9$  is hydrogen,  $C_1$ - $C_7$ -alkyl, hydroxy, amino, or  $C_1$ - $C_7$ -alkoxy.
23. The compound according to claim 6 wherein  $q$  is 0 and  $X^1$  is independently selected from the group consisting of a  $-NH-CH_2-$ ,  $-S-CH_2-$  and  $-CH_2-$ .

24. The compound according to claim 1 wherein  $Ar^2$  has the formula

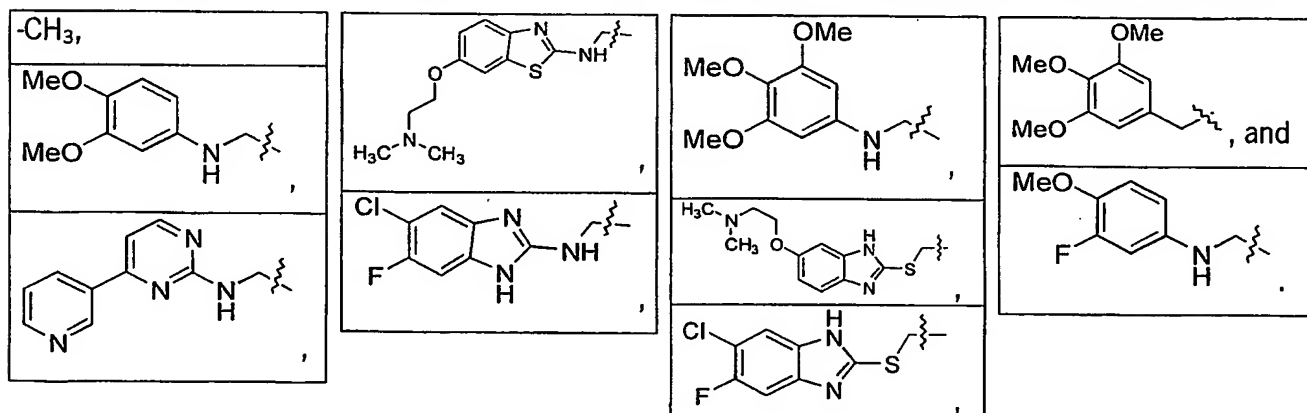


and wherein G, at each occurrence, is independently N or C, and C is optionally substituted.

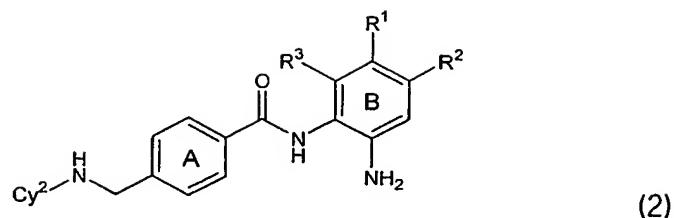
25. The compound according to claim 24 wherein  $Ar^2$  has the formula



26. The compound according to claim 24 wherein  $Ar^2$  is selected from the group consisting of phenylene, benzofuranylene and indolinyne.
27. The compound according to claim 6 wherein the moiety formed by  $Cy^2-X^1$  is selected from:



28. The compound of claim 6 of formula (2):

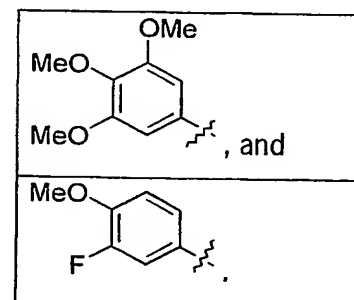
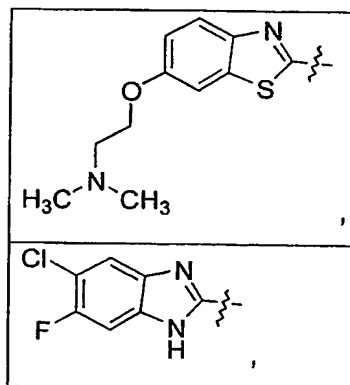
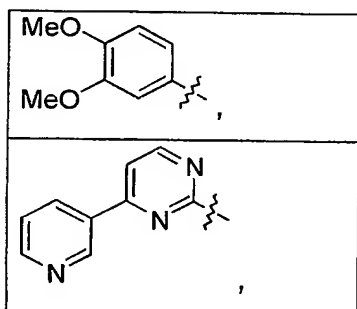


or a pharmaceutically acceptable salt thereof, wherein

$R^2$  and  $R^3$  are independently selected from the group consisting of hydrogen, trifluoromethyl, butyl,  $-(CH_2)_3-OH$ , chloro, fluoro, amino, phenyl, thienyl, furanyl,  $-CHCCHC(O)NH_2$ ,  $-C\equiv CCH_2-OH$ ,  $-C\equiv CCH_2-OCH_3$ ; and

the A ring is optionally further substituted with from 1 to 3 substituents independently selected from methyl, hydroxy, methoxy, halo, and amino.

29. The compound according to claim 28 wherein  $Cy^2$  is selected from:



30. The compound according to claim 28 wherein the A ring is not further substituted.

31. The compound according to claim 28 wherein  $R^2$  and  $R^3$  are  $-H$ .

32. A compound according to claim 1 selected from:

*N*-[2-amino-5-(2-thienyl)phenyl]-4-[(3,4-dimethoxyphenyl)amino]methyl]benzamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-4-[(4-pyridin-3-ylpyrimidin-2-yl)amino]methyl]benzamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-4-[(6-[2-(dimethylamino)ethoxy]-1*H*-benzimidazol-2-yl)thio]methyl]benzamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-4-[(5-chloro-6-fluoro-1*H*-benzimidazol-2-yl)amino]methyl]benzamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-5-[[[3,4,5-trimethoxyphenyl)amino)methyl]-1-benzofuran-2-carboxamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-1-(3,4,5-trimethoxybenzyl)indoline-6-carboxamide;

trans-*N*-[2-amino-5-(2-thienyl)phenyl]-3-(4-[[[3,4,5-trimethoxyphenyl)amino)methyl]phenyl)acrylamide;

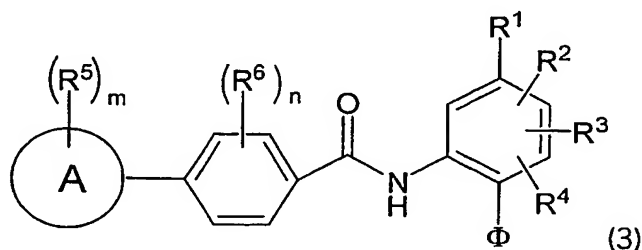
*N*-[2-amino-5-(2-thienyl)phenyl]-4-[[[3-fluoro-4-methoxyphenyl)amino)methyl]benzamide;

*N*-[2-amino-5-(2-thienyl)phenyl]-4-[[[6-chloro-5-fluoro-1*H*-benzimidazol-2-yl)thio)methyl]benzamide;

and a pharmaceutically acceptable salt of any one or more of the foregoing.

33. A compound according to claim 1 for use in inhibiting histone deacetylase.
34. A compound according to claim 1 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.
35. The compound of claim 34, wherein said treatment is effected by inhibiting histone deacetylase.
36. The compound of claim 34, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
37. The compound of claim 34, wherein said cell proliferative disease is cancer.
38. The compound of claim 37, wherein said cancer is a solid tumor cancer.
39. The compound of claim 37, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
40. A pharmaceutical composition comprising a compound according to claim 1 and a pharmaceutically acceptable carrier.
41. The pharmaceutical composition of claim 40 further comprising a nucleic acid level inhibitor of histone deacetylase.
42. The pharmaceutical composition of claim 41, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
43. The pharmaceutical composition of claim 42, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

44. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 1.
45. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 40.
46. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 41.
47. The method of claim 45, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
48. The method of claim 45, wherein said cell proliferative disease is cancer.
49. The method of claim 48, wherein said cancer is a solid tumor cancer.
50. The method of claim 49, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
51. The method of claim 46, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
52. The method of claim 46, wherein said cell proliferative disease is cancer.
53. The method of claim 52, wherein said cancer is a solid tumor cancer.
54. The method of claim 53, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
55. A compound of the formula



or a pharmaceutically acceptable salt or *in vivo* hydrolyzable ester or amide thereof, wherein:

$\Phi$  is  $-\text{NH}_2$  or  $-\text{OH}$ ;

ring A is a heterocyclyl, wherein if said heterocyclyl contains an  $-\text{NH}-$  moiety that nitrogen is optionally substituted by a group selected from K;

$\text{R}^5$  is a substituent on carbon and is selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $\text{C}_{1-6}$ -alkyl,  $\text{C}_{2-6}$ -alkenyl,  $\text{C}_{2-6}$ -alkynyl,  $\text{C}_{1-6}$ -alkoxy,  $\text{C}_{1-6}$ -alkanoyl,  $\text{C}_{1-6}$ -alkanoyloxy,  $N(\text{C}_{1-6}\text{-alkyl})$ amino,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ amino,  $\text{C}_{1-6}$ -alkanoylamino,  $N(\text{C}_{1-6}\text{-alkyl})$ carbamoyl,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ carbamoyl,  $\text{C}_{1-6}$ -alkyl $\text{S}(\text{O})_a$  wherein a is 0 to 2,  $\text{C}_{1-6}$ -alkoxycarbonyl,  $N(\text{C}_{1-6}\text{-alkyl})$ sulphamoyl,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ sulphamoyl, aryl, aryloxy, aryl $\text{C}_{1-6}$ -alkyl, heterocyclic group, (heterocyclic group) $\text{C}_{1-6}$ -alkyl, or a group (B-E-); wherein  $\text{R}^5$ , including group (B-E-), is optionally substituted on carbon by one or more W; and wherein if said heterocyclic group contains an  $-\text{NH}-$  moiety that nitrogen is optionally substituted by J;

W is halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $\text{C}_{1-6}$ -alkyl,  $\text{C}_{2-6}$ -alkenyl,  $\text{C}_{2-6}$ -alkynyl,  $\text{C}_{1-6}$ -alkoxy,  $\text{C}_{1-6}$ -alkanoyl,  $\text{C}_{1-6}$ -alkanoyloxy,  $N(\text{C}_{1-6}\text{-alkyl})$ amino,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ amino,  $\text{C}_{1-6}$ -alkanoylamino,  $N(\text{C}_{1-6}\text{-alkyl})$ carbamoyl,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ carbamoyl,  $\text{C}_{1-6}$ -alkyl $\text{S}(\text{O})_a$  wherein a is 0 to 2,  $\text{C}_{1-6}$ -alkoxycarbonyl,  $N(\text{C}_{1-6}\text{-alkyl})$ sulphamoyl,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ sulphamoyl, or a group (B'-E'); wherein W, including group (B'-E'), is optionally substituted on carbon by one or more Y;

Y and Z are independently selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $\text{C}_{1-6}$ -alkyl,  $\text{C}_{2-6}$ -alkenyl,  $\text{C}_{2-6}$ -alkynyl,  $\text{C}_{1-6}$ -alkoxy,  $\text{C}_{1-6}$ -alkanoyl,  $\text{C}_{1-6}$ -alkanoyloxy,  $N(\text{C}_{1-6}\text{-alkyl})$ amino,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ amino,  $\text{C}_{1-6}$ -alkanoylamino,  $N(\text{C}_{1-6}\text{-alkyl})$ carbamoyl,  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ carbamoyl,  $\text{C}_{1-6}$ -alkyl $\text{S}(\text{O})_a$  wherein a is 0 to 2,  $\text{C}_{1-6}$ -alkoxycarbonyl,  $N(\text{C}_{1-6}\text{-alkyl})$ sulphamoyl or  $N,N(\text{C}_{1-6}\text{-alkyl})_2$ sulphamoyl;

G, J and K are independently selected from  $\text{C}_{1-8}$ -alkyl,  $\text{C}_{1-8}$ -alkenyl,  $\text{C}_{1-8}$ -alkanoyl,  $\text{C}_{1-8}$ -alkylsulphonyl,  $\text{C}_{1-8}$ -alkoxycarbonyl, carbamoyl,  $N(\text{C}_{1-8}\text{-alkyl})$ carbamoyl,  $N,N(\text{C}_{1-8}\text{-alkyl})_2$ carbamoyl, benzyloxycarbonyl, benzoyl, phenylsulphonyl, aryl, aryl $\text{C}_{1-6}$ -alkyl or (heterocyclic group) $\text{C}_{1-6}$ -alkyl; wherein G, J, and K are optionally substituted on carbon by one or more Q; and wherein if said heterocyclic group contains an  $-\text{NH}-$  moiety that nitrogen is optionally substituted by hydrogen or  $\text{C}_{1-6}$ alkyl;

Q is halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkanoyl, C<sub>1-6</sub>-alkanoyloxy, N-(C<sub>1-6</sub>-alkyl)amino, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino, C<sub>1-6</sub>-alkanoylamino, N-(C<sub>1-6</sub>-alkyl)carbamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>-alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>-alkoxycarbonyl, C<sub>1-6</sub>-alkoxycarbonylamino, N-(C<sub>1-6</sub>-alkyl)sulphamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>sulphamoyl, aryl, aryloxy, aryl C<sub>1-6</sub>-alkyl, arylC<sub>1-6</sub>-alkoxy, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>-alkyl, (heterocyclic group)C<sub>1-6</sub>-alkoxy, or a group (B"-E"-); wherein Q, including group (B"-E"-), is optionally substituted on carbon by one or more Z;

B, B' and B" are independently selected from C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>3-8</sub>-cycloalkyl, C<sub>3-8</sub>-cycloalkylC<sub>1-6</sub>-alkyl, aryl, arylC<sub>1-6</sub>-alkyl, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>-alkyl, phenyl or phenylC<sub>1-6</sub>-alkyl; wherein B, B' and B" is optionally substituted on carbon by one or more D; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by a group selected from G;

E, E' and E" are independently selected from -N(R<sup>a</sup>)-, -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -N(R<sup>a</sup>)C(O)N(R<sup>b</sup>)-, -N(R<sup>a</sup>)C(O)O-, -OC(O)N(R<sup>a</sup>)-, -C(O)N(R<sup>a</sup>)-, S(O)<sub>r</sub>, -SO<sub>2</sub>N(R<sup>a</sup>)-, -N(R<sup>a</sup>)SO<sub>2</sub>- wherein R<sup>a</sup> and R<sup>b</sup> are independently selected from hydrogen or C<sub>1-6</sub>-alkyl optionally substituted by one or more F and r is 0-2;

D and F are independently selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkanoyl, C<sub>1-6</sub>-alkanoyloxy, N-(C<sub>1-6</sub>-alkyl)amino, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino, C<sub>1-6</sub>-alkanoylamino, N-(C<sub>1-6</sub>-alkyl)carbamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>-alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>-alkoxycarbonyl, N-(C<sub>1-6</sub>-alkyl)sulphamoyl or N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>sulphamoyl;

m is 0, 1, 2, 3 or 4; wherein the values of R<sup>5</sup> may be the same or different;

R<sup>6</sup> is halo;

n is 0, 1 or 2; wherein the values of R<sup>6</sup> are the same or different; and

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1.

56. The compound of claim 55 wherein:

Ring A is a heterocyclyl;

R<sup>5</sup> is halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-



alkanoyl, C<sub>1-6</sub>-alkanoyloxy, N-(C<sub>1-6</sub>-alkyl)amino, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino, C<sub>1-6</sub>-alkanoylamino, N-(C<sub>1-6</sub>-alkyl)carbamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>-alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>-alkoxycarbonyl, N-(C<sub>1-6</sub>-alkyl)sulphamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>sulphamoyl or a group (B-E-); wherein, B is selected from C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>3-8</sub>-cycloalkyl, C<sub>3-8</sub>-cycloalkylC<sub>1-6</sub>-alkyl, phenyl, heterocyclyl, phenylC<sub>1-6</sub>-alkyl or heterocyclylC<sub>1-6</sub>-alkyl; wherein B is optionally substituted on carbon by one or more D; and wherein if said heterocyclyl contains an -NH- moiety that nitrogen is optionally substituted by a group selected from G;

E is -N(R<sup>a</sup>)-, -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -C(O)N(R<sup>a</sup>)-, -S(O)<sub>r</sub>-, -SO<sub>2</sub>N(R<sup>a</sup>)-, -N(R<sup>a</sup>)SO<sub>2</sub>- wherein R<sup>a</sup> is hydrogen or C<sub>1-6</sub>-alkyl optionally substituted by one or more D and r is 0-2;

D is independently selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkanoyl, C<sub>1-6</sub>-alkanoyloxy, N-(C<sub>1-6</sub>-alkyl)amino, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino, C<sub>1-6</sub>-alkanoylamino, N-(C<sub>1-6</sub>-alkyl)carbamoyl, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>-alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>-alkoxycarbonyl, N-(C<sub>1-6</sub>-alkyl)sulphamoyl and N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>sulphamoyl;

G is selected from C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkanoyl, C<sub>1-4</sub>-alkylsulphonyl, C<sub>1-4</sub>-alkoxycarbonyl, carbamoyl, N-(C<sub>1-4</sub>-alkyl)carbamoyl, N,N-(C<sub>1-4</sub>-alkyl)carbamoyl, benzyl, benzyloxycarbonyl, benzoyl and phenylsulphonyl;

m is 0, 1, 2, 3 or 4; wherein the values of R<sup>5</sup> are the same or different;

R<sup>6</sup> is halo; and

n is 0, 1 or 2; wherein the values of R<sup>6</sup> are the same or different.

57. The compound of claim 56 wherein:

Ring A is a pyridyl, quinolyl, indolyl, pyrimidinyl, morpholinyl, piperidinyl, piperazinyl, pyradazinyl, pyrazinyl, thiazolyl, thienyl, thienopyrimidinyl, thienopyridinyl, purinyl, triazinyl, oxazolyl, pyrazolyl, or furanyl; wherein if Ring A contains an -NH- moiety that nitrogen is optionally substituted by a group selected from K;

R<sup>5</sup> is a substituent on carbon and is selected from halo, amino, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, N-(C<sub>1-6</sub>-alkyl)amino, aryl, aryloxy, arylC<sub>1-6</sub>-alkyl, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>-alkyl, or a group (B-E-); wherein R<sup>5</sup>, including group (B-E-), is optionally substituted on carbon by

one or more W; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by J;

W is hydroxy, mercapto, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkoxy, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino or a group (B'-E'-);

wherein W, including group (B'-E'-), is optionally substituted on carbon by one or more Y;

Y and Z are independently selected from halo, nitro, cyano, hydroxy, C<sub>1-6</sub>-alkoxy, N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino or C<sub>1-6</sub>-alkanoylamino;

G, J and K are independently selected from C<sub>1-8</sub>-alkyl, C<sub>2-8</sub>-alkenyl, C<sub>1-8</sub>-alkanoyl, aryl, arylC<sub>1-6</sub>-alkyl or (heterocyclic group)C<sub>1-6</sub>-alkyl; wherein G, J and K are optionally substituted on carbon by one or more Q; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by hydrogen or C<sub>1-6</sub>-alkyl;

Q is cyano, hydroxy, C<sub>1-6</sub>-alkoxy, C<sub>1-6</sub>-alkanoyloxy, C<sub>1-6</sub>-alkoxycarbonyl, C<sub>1-6</sub>-alkoxycarbonylamino, aryl, aryloxy or a group (B''-E''); wherein Q, including group (B''-E''), is optionally substituted on carbon by one or more Z;

B, B' and B'' are independently selected from C<sub>1-6</sub>-alkyl, C<sub>2-6</sub>-alkenyl, C<sub>2-6</sub>-alkynyl, C<sub>3-8</sub>-cycloalkyl, C<sub>3-8</sub>-cycloalkylC<sub>1-6</sub>-alkyl, aryl, arylC<sub>1-6</sub>-alkyl, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>-alkyl, phenyl or phenylC<sub>1-6</sub>-alkyl; wherein B, B' and B'' are optionally substituted on carbon by one or more D; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by a group selected from G;

E, E' and E'' are independently selected from -N(R<sup>a</sup>)-, -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -N(R<sup>a</sup>)C(O)N(R<sup>a</sup>)-, .N(R<sup>a</sup>)C(O)O-, -OC(O)N(R<sup>a</sup>)-, -C(O)N(R<sup>a</sup>)-, -S(O)-, -SO<sub>2</sub>N(R<sup>a</sup>)-, -N(R<sup>a</sup>)SO<sub>2</sub>- wherein R<sup>a</sup> and R<sup>b</sup> are independently selected from hydrogen or C<sub>1-6</sub>-alkyl optionally substituted by one or more F and r is 0-2;

D and F are independently selected from halo, C<sub>1-6</sub>-alkoxy or N,N-(C<sub>1-6</sub>-alkyl)<sub>2</sub>amino;

m is 0, 1, 2, 3 or 4; wherein the values of R<sup>5</sup> are the same or different;

R<sup>6</sup> is fluoro or chloro; and

n is 0, 1 or 2, wherein the values of R<sup>6</sup> are the same or different;

58. The compound of claim 57 wherein:

Ring A is pyridin-4-yl, pyridin-3-yl, pyridin-2-yl, quinolin-8-yl, pyrimidin-6-yl, pyrimidin-5-yl, pyrimidin-4-yl, morpholin-4-yl, piperidin-4-yl, piperidin-3-yl, piperidin-2-yl, piperazin-4-yl, pyridazin-5-yl, pyrazin-6-yl, thiazol-2-yl, thien-2-yl, thieno[3,2d]pyrimidinyl,

thieno[3,2b]pyrimidinyl, thieno[3,2b]pyridinyl, purin-6-yl or triazin-6-yl; wherein if Ring A contains an -NH- moiety that nitrogen is optionally substituted by a group selected from K; R<sup>5</sup> is a substituent on carbon and is selected from fluoro, chloro, amino, methyl, ethyl, propyl, methoxy, *N*-methylamino, *N*-ethylamino, *N*-propylamino, *N*-butylamino, phenyl, naphthylethyl, piperazin-1-yl, piperidin-1-yl, piperidin-4-yl, 2-(thiomethyl)-pyrimidin-4-yl, tetrahydrofuran-2-ylmethyl, tetrahydropyran-2-ylmethyl, 1,2,5-thiadiazol-3-ylethyl, piperidin-1-ylmethyl, pyridin-2-ylmethyl, or a group (B-B-); wherein R<sup>5</sup>, including group (B-B-), is optionally substituted on carbon by one or more W; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by J;

W is hydroxy, methyl, ethyl, ethoxy, *N,N*-(diethyl)amino, *N,N*-(dibutyl)amino, or a group (B'-E'-); wherein W, including group (B'-E'-), is optionally substituted on carbon by one or more Y;

Y and Z are independently selected from fluoro, chloro, bromo, nitro, cyano, hydroxy, methoxy, *N,N*-(dimethyl)amino or methylcarbonylamino;

G, J and K are independently selected from methyl, ethyl, propyl, pentyl, 2-methylbutyl, butyl, acetyl, benzyl, 3-(pyrrol-1-yl)propyl or pyrrolidin-2-one-(5S)-methyl; wherein G, J and K are optionally substituted on carbon by one or more Q; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by hydrogen or methyl;

Q is cyano, hydroxy, methoxy, ethoxy, methylcarbonyloxy, methoxycarbonyl, *t*-butoxycarbonylamino, phenyl or a group (B''-E''-); wherein Q, including group (B''-E''-), is optionally substituted on carbon by one or more Z;

B, B' and B'' are independently selected from methyl, ethyl, propyl, cyclohexyl, phenyl, benzyl, 1,2,3,4-tetrahydroquinolinyl, 3-morpholinopropyl, 2-morpholinoethyl, 2-pyrrolidin-1-ylethyl, 3-morpholinopropyl, 3-(4-methylpiperazin-1-yl)propyl, 2-piperidin-1-ylethyl, 3-piperidin-1-ylpropyl, pyridin-3-ylmethyl or imidazol-1-ylpropyl; wherein B, B' and B'' are optionally substituted on carbon by one or more D; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen is optionally substituted by a group selected from G;

E, E' and E'' are independently selected from -N(R<sup>a</sup>)-, -O-, -C(O)-, -NHC(O)-, -N(R<sup>a</sup>)C(O)O-; wherein R<sup>a</sup> is hydrogen or methyl optionally substituted by one or more F;

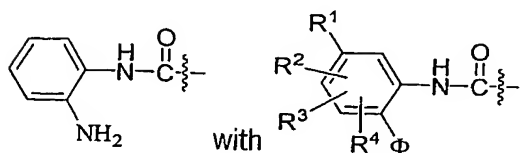
D and F are independently selected from fluoro, methoxy or ethoxy;

m is 0, 1, or 2; wherein the values of R<sup>5</sup> are the same or different;

R<sup>6</sup> is fluoro; and

n is 0 or 1.

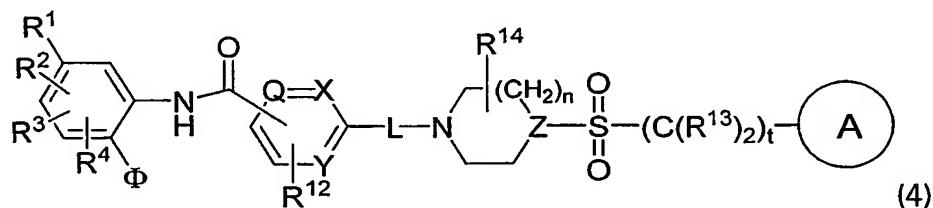
59. The compound of claim 55 that is selected from one of the compounds from Tables 1-8 and 13 of WO 03/087057 modified by replacing the terminal moiety:



, wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1.

60. A compound according to claim 55 for use in inhibiting histone deacetylase.
61. A compound according to claim 55 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.
62. The compound of claim 61, wherein said treatment is effected by inhibiting histone deacetylase.
63. The compound of claim 61, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
64. The compound of claim 61, wherein said cell proliferative disease is cancer.
65. The compound of claim 64, wherein said cancer is a solid tumor cancer.
66. The compound of claim 64, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
67. A pharmaceutical composition comprising a compound according to claim 55 and a pharmaceutically acceptable carrier.
68. The pharmaceutical composition of claim 67 further comprising a nucleic acid level inhibitor of histone deacetylase.
69. The pharmaceutical composition of claim 68, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
70. The pharmaceutical composition of claim 69, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
71. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 55.

72. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 67.
73. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 68.
74. The method of claim 72, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
75. The method of claim 72, wherein said cell proliferative disease is cancer.
76. The method of claim 75, wherein said cancer is a solid tumor cancer.
77. The method of claim 76, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
78. The method of claim 73, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
79. The method of claim 73, wherein said cell proliferative disease is cancer.
80. The method of claim 77, wherein said cancer is a solid tumor cancer.
81. The method of claim 78, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
82. A compound of the formula:



the N-oxide forms, the pharmaceutically acceptable addition salts or the stereo-chemically isomeric forms thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

n is 0, 1, 2 or 3, wherein when n is 0 then a direct bond is intended;

t is 0, 1, 2, 3 or 4, wherein when t is 0 then a direct bond is intended;

Q, X, Y, and Z are independently N or CH;

R<sup>1</sup> is H or as defined in claim 1;

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1;

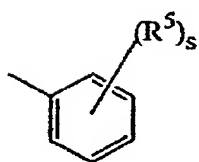
R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, trifluoromethyl, di(C<sub>1-6</sub>-alkyl)amino, hydroxyamino and naphthalenylsulfonylpyrazinyl;

-L- is a direct bond or a bivalent radical selected from C<sub>1-6</sub>-alkanediyl, amino, carbonyl and aminocarbonyl;

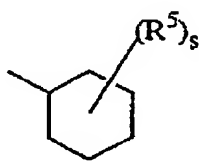
each R<sup>13</sup> is a hydrogen atom, wherein when t is 2, 3, or 4 one of the R<sup>13</sup> is optionally aryl;

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyc<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, arylC<sub>1-6</sub>-alkyl, aminocarbonyl, hydroxycarbonyl, aminoc<sub>1-6</sub>-alkyl, aminocarbonylC<sub>1-6</sub>-alkyl, hydroxycarbonylC<sub>1-6</sub>-alkyl, hydroxyaminocarbonyl, C<sub>1-6</sub>-alkyloxycarbonyl, C<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl or di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl;

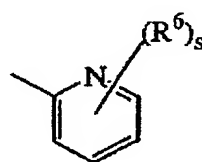
Ring A is selected from



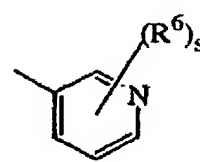
(a-1)



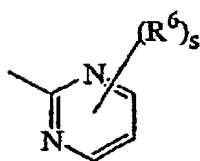
(a-2)



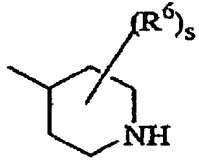
(a-3)



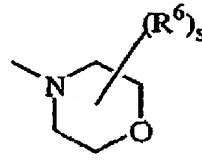
(a-4)



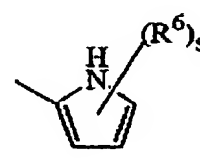
(a-5)



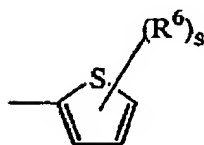
(a-6)



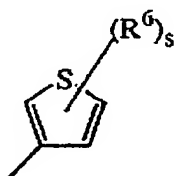
(a-7)



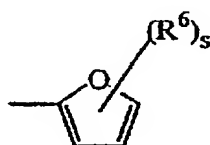
(a-8)



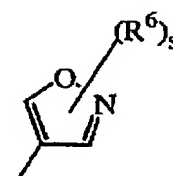
(a-9)



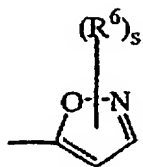
(a-10)



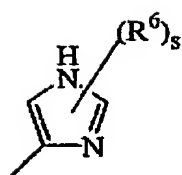
(a-11)



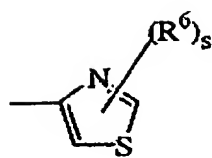
(a-12)



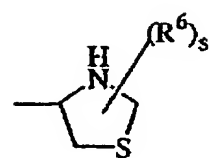
(a-13)



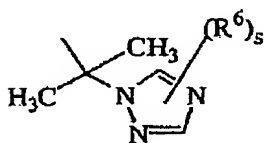
(a-14)



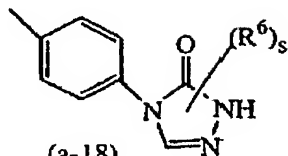
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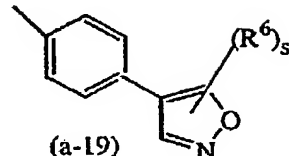
(a-16)



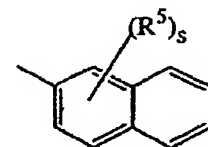
(a-17)



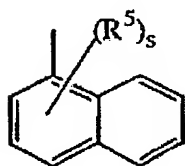
(a-18)



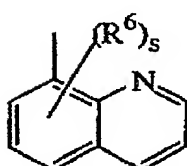
(a-19)



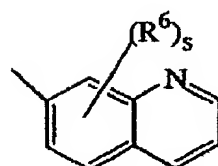
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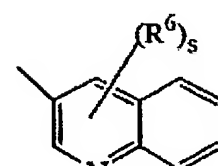
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(a-22)



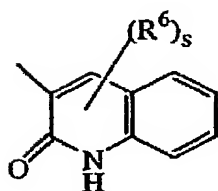
(a-23)



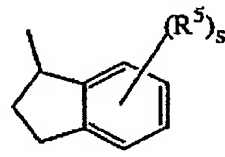
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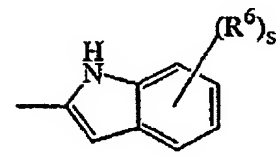
(a-25)



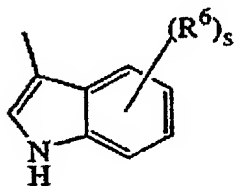
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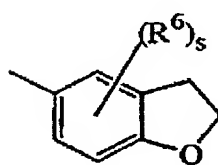
(a-27)



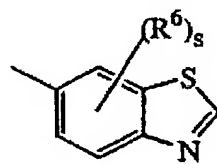
(a-28)



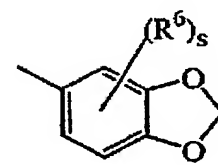
(a-29)



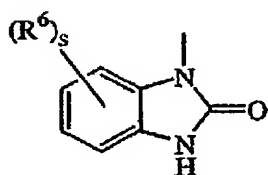
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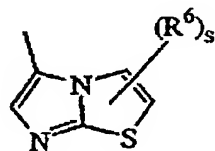
(a-31)



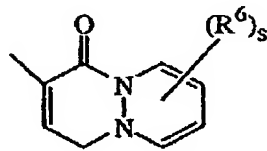
(a-32)



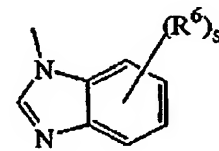
(a-33)



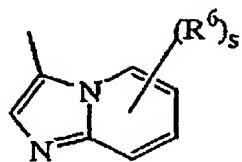
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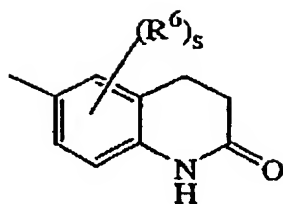
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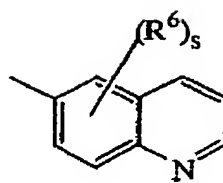
(a-36)



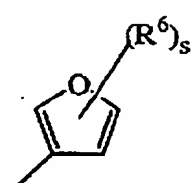
(a-37)



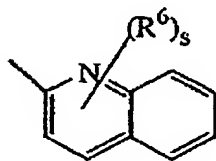
(a-38)



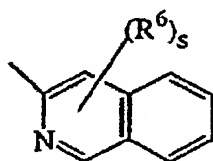
(a-39)



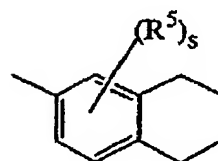
(a-40)



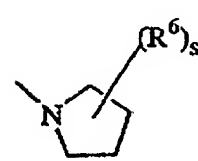
(a-41)



(a-42)



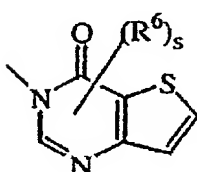
(a-43)



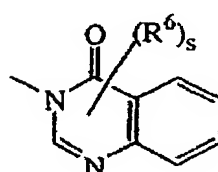
(a-44)



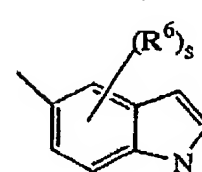
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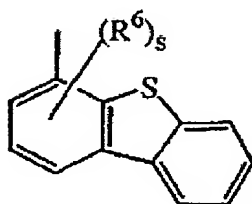
(a-46)



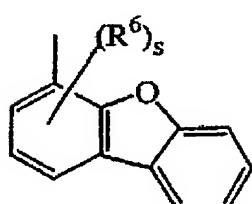
(a-47)



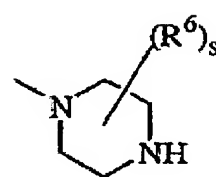
(a-48)



(a-49)



(a-50)



(a-51)

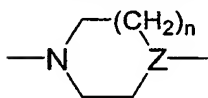
wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;

$R^5$  and  $R^6$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ -alkyl; trihalo $C_{1-6}$ -alkyloxy;  $C_{1-6}$ -alkyl;  $C_{1-6}$ -alkyl substituted with aryl and  $C_{3-10}$ -cycloalkyl;  $C_{1-6}$ -alkyloxy;  $C_{1-6}$ -alkyloxy $C_{1-6}$ -alkyloxy;  $C_{1-6}$ -alkylcarbonyl;  $C_{1-6}$ -alkyloxycarbonyl;  $C_{1-6}$ -alkylsulfonyl; cyano $C_{1-6}$ -alkyl; hydroxy $C_{1-6}$ -alkyl; hydroxy $C_{1-6}$ -alkyloxy; hydroxy $C_{1-6}$ -alkylamino; amino $C_{1-6}$ -alkyloxy; di( $C_{1-6}$ -alkyl)aminocarbonyl; di(hydroxy $C_{1-6}$ -alkyl)amino; (aryl)( $C_{1-6}$ -alkyl)amino; di( $C_{1-6}$ -alkyl)amino $C_{1-6}$ -alkyloxy; di( $C_{1-6}$ -alkyl)amino $C_{1-6}$ -alkylamino; di( $C_{1-6}$ -alkyl)amino $C_{1-6}$ -alkylamino $C_{1-6}$ -alkyl; arylsulfonyl; arylsulfonylamino; aryloxy; aryloxy $C_{1-6}$ -alkyl; aryl $C_{2-6}$ -alkenediyl; di( $C_{1-6}$ -alkyl)amino; di( $C_{1-6}$ -alkyl)amino $C_{1-6}$ -alkyl; di( $C_{1-6}$ -alkyl)amino( $C_{1-6}$ -alkyl)amino; di( $C_{1-6}$ -alkyl)amino( $C_{1-6}$ -alkyl)amino $C_{1-6}$ -alkyl; di( $C_{1-6}$ -



alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)amino; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; aminosulfonylamino(C<sub>1-6</sub>-alkyl)amino; aminosulfonylamino(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)amino; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)amino; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)amino; cyano; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxypiperidinyl, C<sub>1-6</sub>-alkyloxypiperidinylC<sub>1-6</sub>-alkyl, morpholinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, or di(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>-alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>-alkyloxy; morpholinyl; C<sub>1-6</sub>-alkylmorpholinyl; morpholinylC<sub>1-6</sub>-alkyloxy; morpholinylC<sub>1-6</sub>-alkyl; morpholinylC<sub>1-6</sub>-alkylamino; morpholinylC<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl; piperazinyl; C<sub>1-6</sub>-alkylpiperazinyl; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyloxy; piperazinylC<sub>1-6</sub>-alkyl; naphthalenylsulfonylpiperazinyl; naphthalenylsulfonylpiperidinyl; naphthalenylsulfonyl; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkylamino; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkylpiperazinylsulfonyl; aminosulfonylpiperazinylC<sub>1-6</sub>-alkyloxy; aminosulfonylpiperazinyl; aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl; di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinyl; di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkylpiperazinyl; hydroxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxypiperidinyl; C<sub>1-6</sub>-alkyloxypiperidinylC<sub>1-6</sub>-alkyl; piperidinylaminoC<sub>1-6</sub>-alkylamino; piperidinylaminoC<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl; (C<sub>1-6</sub>-alkylpiperidinyl)(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkylamino; (C<sub>1-6</sub>-alkylpiperidinyl)(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinyl; hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; (hydroxyC<sub>1-6</sub>-alkyl)(C<sub>1-6</sub>-alkyl)amino; (hydroxyC<sub>1-6</sub>-alkyl)(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl; di(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; pyrrolidinylC<sub>1-6</sub>-alkyl; pyrrolidinylC<sub>1-6</sub>-alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl substituted with two substituents selected from C<sub>1-6</sub>-alkyl and trihaloC<sub>1-6</sub>-alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>-alkyloxy, aryloxy or aryl; pyrimidinyl; tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>-alkyl; quinolinyl; indolyl; phenyl; phenyl substituted with one, two or three substituents independently selected from halo, amino, nitro, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, hydroxyC<sub>1-4</sub>-alkyl, trifluoromethyl,

trifluoromethyloxy, hydroxyC<sub>1-4</sub>-alkyloxy, C<sub>1-4</sub>-alkylsulfonyl, C<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkyloxy, C<sub>1-4</sub>-alkyloxycarbonyl, aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminocarbonyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkylaminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)amino(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)amino(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, aminosulfonylamino(C<sub>1-4</sub>-alkyl)amino, aminosulfonylamino(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminosulfonylamino(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminosulfonylamino(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, cyano, piperidinyC<sub>1-4</sub>-alkyloxy, pyrrolidinyC<sub>1-4</sub>-alkyloxy, aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkylpiperazinyl, hydroxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkyloxypiperidiny, C<sub>1-4</sub>-alkyloxypiperidinyC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkylpiperazinyl, hydroxyC<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, (hydroxyC<sub>1-4</sub>-alkyl)(C<sub>1-4</sub>-alkyl)amino, (hydroxyC<sub>1-4</sub>-alkyl)(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(hydroxyC<sub>1-4</sub>-alkyl)amino, di(hydroxyC<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, furanyl, furanyl substituted with -CH=CH-CH=CH-, pyrrolidinyC<sub>1-4</sub>-alkyl, pyrrolidinyC<sub>1-4</sub>-alkyloxy, morpholinyl, morpholinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyl, morpholinylC<sub>1-4</sub>-alkylamino, morpholinylC<sub>1-4</sub>-alkylaminoC<sub>1-4</sub>-alkyl, piperazinyl, C<sub>1-4</sub>-alkylpiperazinyl, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyloxy, piperazinylC<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkylamino, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkylaminoC<sub>1-6</sub>-alkyl, tetrahydropyrimidinylpiperazinyl, tetrahydropyrimidinylpiperazinylC<sub>1-4</sub>-alkyl, piperidinylaminoC<sub>1-4</sub>-alkylamino, piperidinylaminoC<sub>1-4</sub>-alkylaminoC<sub>1-4</sub>-alkyl, (C<sub>1-4</sub>-alkylpiperidinyl)(hydroxyC<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkylamino, (C<sub>1-4</sub>-alkylpiperidinyl)(hydroxyC<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkylaminoC<sub>1-4</sub>-alkyl, pyridinyC<sub>1-4</sub>-alkyloxy, hydroxyC<sub>1-4</sub>-alkylamino, hydroxyC<sub>1-4</sub>-alkylaminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>-alkyloxy, and thiophenylC<sub>1-4</sub>-alkylamino; the central moiety



is optionally bridged (*i.e.*, forming a bicyclic moiety) with a methylene, ethylene or propylene bridge;

each R<sup>5</sup> and R<sup>6</sup> can be placed on the nitrogen in replacement of the hydrogen;

aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, trifluoromethyl, cyano, and hydroxycarbonyl.

83. The compound of claim 82 wherein:

n is 1 or 2;

t is 0, 1 or 2;

each Z is nitrogen;

R<sup>12</sup> is hydrogen, nitro, C<sub>1-6</sub>-alkyloxy, trifluoromethyl, di(C<sub>1-6</sub>-alkyl) amino, hydroxyamino or naphthalenylsulfonylpyrazinyl;

-L- is a direct bond or a bivalent radical selected from C<sub>1-6</sub>-alkanediyl, carbonyl and aminocarbonyl;

each R<sup>13</sup> is hydrogen;

R<sup>14</sup> is hydrogen, hydroxyC<sub>1-6</sub>-alkyl, aminocarbonyl, hydroxyaminocarbonyl or di(C<sub>1-6</sub>-alkyl) aminoC<sub>1-6</sub>-alkyl;

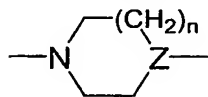
the A ring is a radical selected from (a-1), (a-7), (a-9), (a-10), (a-12), (a-14), (a-19), (a-20), (a-21), (a-22), (a-23), (a-30), (a-34), (a-49) and (a-50);

each s is independently 0, 1, 2 or 5;

each R<sup>5</sup> and R<sup>6</sup> are independently selected from hydrogen; halo; nitro; trihaloC<sub>1-6</sub>-alkyl; trihaloC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkylsulfonyl; (aryl)(C<sub>1-6</sub>-alkyl)amino; arylsulfonyl; aryloxy; arylC<sub>2-6</sub>-alkenediyl; di(C<sub>1-6</sub>-alkyl)amino; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxypiperidinylC<sub>1-6</sub>-alkyl, morpholinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, or di(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; furanyl; oxazolyl; pyrrolyl; pyrazolyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>-alkyloxy; quinolinyl; indolyl; phenyl; and phenyl substituted with one, two or three substituents independently selected from halo, amino, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, hydroxyC<sub>1-4</sub>-alkyl, trifluoromethyl, trifluoromethoxy, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, di(hydroxyC<sub>1-4</sub>-

alkyl)aminoC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyl, and C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, and

the central moiety



is optionally bridged (i.e., forming a bicyclic moiety) with a methylene bridge.

84. The compound of claim 83 wherein:

t is 0 or 2;

R<sup>12</sup> is hydrogen;

-L- is a direct bond;

R<sup>14</sup> is hydrogen;

the A ring is a radical selected from (a-1), (a-9), (a-19), (a-20), (a-21), (a-22), (a-23), (a-49) and (a-50); and

each R<sup>5</sup> and R<sup>6</sup> is independently selected from hydrogen; halo; trihaloC<sub>1-6</sub>-alkyl; trihaloC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxy; arylC<sub>2-6</sub>-alkenediyl; di(C<sub>1-6</sub>-alkyl)amino; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxypiperidinylC<sub>1-6</sub>-alkyl, morpholinylC<sub>1-6</sub>-alkyl, hydroxyC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, or di(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; furanyl; oxazolyl; pyrazolyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>-alkyloxy; quinolinyl; indolyl; phenyl; and phenyl substituted with one, two or three substituents independently selected from halo, amino, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, hydroxyC<sub>1-4</sub>-alkyl, trifluoromethyl, trifluoromethyloxy, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, di(hydroxyC<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkyl pyrrolidinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyl, and C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl.

85. The compound of claim 83 wherein:

n is 1;

t is 0;

R<sup>12</sup> is hydrogen;

-L- is a direct bond;

R<sup>14</sup> is hydrogen;

the A ring is a radical selected from (a-1) and (a-20);

each s is independently 0 or 1; and

each R<sup>5</sup> and R<sup>6</sup> is independently selected from hydrogen; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl or C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; furanyl; phenyl; and phenyl substituted with one substituent independently selected from di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkyloxy and C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl.

86. The compound of claim 82 wherein L is a direct bond and R<sup>12</sup> is H.

87. The compound of claim 82 wherein:

t is 0;

R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, trifluoromethyl or di(C<sub>1-6</sub>-alkyl)amino;

-L- is a direct bond or a bivalent radical selected from C<sub>1-6</sub>-alkanediyl, amino, and carbonyl;

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, arylC<sub>1-6</sub>-alkyl, aminocarbonyl, aminoC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl or di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl;

the A ring is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) and (a-51);

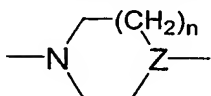
each s is independently 0, 1, 2, 3 or 4;

R<sup>5</sup> is hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>-alkyl; trihaloC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkylcarbonyl; C<sub>1-6</sub>-alkyloxycarbonyl; C<sub>1-6</sub>-alkylsulfonyl; hydroxyC<sub>1-6</sub>-alkyl; aryloxy; di(C<sub>1-6</sub>-alkyl)amino; cyano; thiophenyl; furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>-alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl; C<sub>1-6</sub>-alkylmorpholinyl; piperazinyl; C<sub>1-6</sub>-alkylpiperazinyl; hydroxyC<sub>1-6</sub>-alkylpiperazinyl; C<sub>1-6</sub>-alkyloxypiperidinyl; pyrazolyl; pyrazolyl substituted with one or two substituents selected from C<sub>1-6</sub>-alkyl and trihaloC<sub>1-6</sub>-alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>-alkyloxy, aryloxy or aryl;

pyrimidinyl; quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, or trifluoromethyl;

R<sup>6</sup> is hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>-alkyl; trihaloC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkylcarbonyl; C<sub>1-6</sub>-alkyloxycarbonyl; C<sub>1-6</sub>-alkylsulfonyl; hydroxyC<sub>1-6</sub>-alkyl; aryloxy; di(C<sub>1-6</sub>-alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, and trifluoromethyl, and

the central moiety



is optionally bridged (*i.e.*, forming a bicyclic moiety) with an ethylene bridge.

88. The compound of claim 82 wherein:

R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, trifluoromethyl, hydroxyamino or naphthalenylsulfonylpyrazinyl;

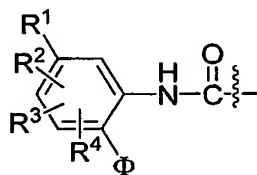
R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, arylC<sub>1-6</sub>-alkyl, aminocarbonyl, hydroxycarbonyl, aminoC<sub>1-6</sub>-alkyl, aminocarbonylC<sub>1-6</sub>-alkyl, hydroxycarbonylC<sub>1-6</sub>-alkyl, hydroxyaminocarbonyl, C<sub>1-6</sub>-alkyloxycarbonyl, C<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl or di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl;

the A ring is a radical selected from (a-1), (a-2), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-27), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-43) and (a-44); and

each R<sup>5</sup> and R<sup>6</sup> are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>-alkyl; trihaloC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkylcarbonyl; C<sub>1-6</sub>-alkylsulfonyl; cyanoC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkyloxy; hydroxyC<sub>1-6</sub>-alkylamino; aminoC<sub>1-6</sub>-alkyloxy; di(C<sub>1-6</sub>-alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>-alkyl)amino; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyloxy; di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkylamino; arylsulfonyl; arylsulfonylamino; aryloxy; arylC<sub>2-6</sub>-alkenediyl; di(C<sub>1-6</sub>-alkyl)amino; cyano; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl or di(hydroxyC<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; furanyl; imidazolyl; C<sub>1-6</sub>-alkyltriazolyl; tetrazolyl; piperidinylC<sub>1-6</sub>-alkyloxy; morpholinyl; C<sub>1-6</sub>-

alkylmorpholinyl; morpholinylC<sub>1-6</sub>-alkyloxy; morpholinylC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyloxy; C<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkylpiperazinylsulfonyl; aminosulfonylpiperazinylC<sub>1-6</sub>-alkyloxy; aminosulfonylpiperazinyl; aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl; di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinyl; di(C<sub>1-6</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkylpiperazinyl; hydroxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; C<sub>1-6</sub>-alkyloxypiperidinyl; C<sub>1-6</sub>-alkyloxypiperidinylC<sub>1-6</sub>-alkyl; hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinyl; hydroxyC<sub>1-6</sub>-alkyloxyC<sub>1-6</sub>-alkylpiperazinylC<sub>1-6</sub>-alkyl; (hydroxyC<sub>1-6</sub>-alkyl)(C<sub>1-6</sub>-alkyl)amino; (hydroxyC<sub>1-6</sub>-alkyl)(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl; pyrrolidinylC<sub>1-6</sub>-alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl substituted with two substituents selected from C<sub>1-6</sub>-alkyl or trihaloC<sub>1-6</sub>-alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>-alkyloxy or aryl; pyrimidinyl; quinolinyl; phenyl; and phenyl substituted with one, two or three substituents independently selected from halo, amino, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, hydroxyC<sub>1-4</sub>-alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>-alkoxy, C<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkoxy, aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyloxy, di(C<sub>1-4</sub>-alkyl)amino, piperidinylC<sub>1-4</sub>-alkyloxy, pyrrolidinylC<sub>1-4</sub>-alkyloxy, aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>-alkyl, di(C<sub>1-4</sub>-alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>-alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkylpiperazinyl, hydroxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkyloxypiperidinyl, C<sub>1-4</sub>-alkoxypiperidinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkyloxyC<sub>1-4</sub>-alkylpiperazinyl, hydroxyC<sub>1-4</sub>-alkoxyC<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkyl)(C<sub>1-4</sub>-alkyl)amino, (hydroxyC<sub>1-4</sub>-alkyl)(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkyl, pyrrolidinylC<sub>1-4</sub>-alkoxy, morpholinylC<sub>1-4</sub>-alkyloxy, morpholinylC<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkoxy, C<sub>1-4</sub>-alkylpiperazinylC<sub>1-4</sub>-alkyl, hydroxyC<sub>1-4</sub>-alkylamino, di(hydroxyC<sub>1-4</sub>-alkyl)amino, di(C<sub>1-4</sub>-alkyl)aminoC<sub>1-4</sub>-alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>-alkyloxy, and thiophenylC<sub>1-4</sub>-alkylamino.

89. The compound of claim 82 that is selected from one of the compounds of pages 21 and 22 and Table F-1 of WO 03/076422 wherein the terminal hydroxamic acid moiety (HO-NH-C(O)-) is replaced with

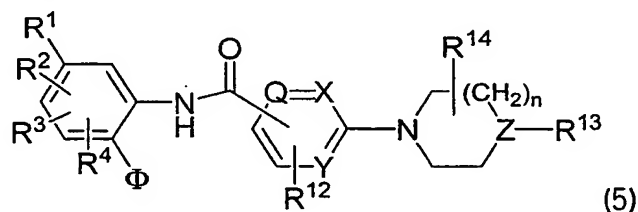


wherein  $\Phi$ , R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1.

90. A compound according to claim 82 for use in inhibiting histone deacetylase.
91. A compound according to claim 82 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.
92. The compound of claim 91, wherein said treatment is effected by inhibiting histone deacetylase.
93. The compound of claim 91, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
94. The compound of claim 91, wherein said cell proliferative disease is cancer.
95. The compound of claim 94, wherein said cancer is a solid tumor cancer.
96. The compound of claim 94, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
97. A pharmaceutical composition comprising a compound according to claim 82 and a pharmaceutically acceptable carrier.
98. The pharmaceutical composition of claim 97 further comprising a nucleic acid level inhibitor of histone deacetylase.
99. The pharmaceutical composition of claim 98, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
100. The pharmaceutical composition of claim 99, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
101. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 82.
102. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 97.
103. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising



- administering to said individual a treatment effective amount of the pharmaceutical composition of claim 98.
104. The method of claim 102, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
105. The method of claim 102, wherein said cell proliferative disease is cancer.
106. The method of claim 102, wherein said cancer is a solid tumor cancer.
107. The method of claim 106, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
108. The method of claim 103, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
109. The method of claim 103, wherein said cell proliferative disease is cancer.
110. The method of claim 109, wherein said cancer is a solid tumor cancer.
111. The method of claim 110, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
112. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

R<sup>1</sup> is H or as defined in paragraph claim 1;

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in paragraph claim 1;

n is 0, 1, 2 or 3 and when n is 0 then a direct bond is intended;

Q is nitrogen or  $\text{—C}\equiv$ ,  $\text{—CR}$ , or  $\text{—CH}$  ;

X is nitrogen or  $\text{—C}\equiv$  ;

Y is nitrogen or  $\text{—C}\equiv$  ;

Z is nitrogen or  $\text{—CH}$  ;

R is selected from the group consisting of hydrogen, halogen,  $\text{—NH}_2$ , nitro, hydroxy, aryl, heterocyclyl,  $\text{C}_3\text{—C}_8\text{—cycloalkyl}$ , heteroaryl,  $\text{C}_1\text{—C}_7\text{—alkyl}$ , haloalkyl,  $\text{C}_1\text{—C}_7\text{—alkenyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl}$ ,  $\text{C}_1\text{—C}_7\text{—acyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-aryloxy}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfanyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfinyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylaminosulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylamine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-R}^9$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-R}^9$  wherein  $\text{R}^9$  is hydrogen, hydroxy, amino,  $\text{C}_1\text{—C}_7\text{—alkyl}$  or  $\text{C}_1\text{—C}_7\text{—alkoxy}$ ;

$\text{R}^{12}$  is hydrogen, halo, hydroxy, amino, nitro,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxy}$ , trifluoromethyl,  $\text{di(C}_{1-6}\text{alkyl)amino}$ , hydroxyamino or naphthalenylsulfonylpyrazinyl;

$\text{R}^{13}$  is hydrogen,  $\text{C}_{1-6}\text{alkyl}$ , aryl $\text{C}_{2-6}\text{alkenediyl}$ , furanylcabonyl, naphthalenylcarbonyl,  $\text{—C(O)phenylR}^9$ ,  $\text{C}_{1-6}\text{alkylaminocarbonyl}$ , aminosulfonyl, arylaminosulfonyl, aminosulfonylamino,  $\text{di(C}_{1-6}\text{alkyl)aminosulfonylamino}$ , arylaminosulfonylamino, aminosulfonylamino $\text{C}_{1-6}\text{alkyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminosulfonylaminoC}_{1-6}\text{alkyl}$ , arylaminosulfonylamino $\text{C}_{1-6}\text{alkyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminoC}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-12}\text{alkylsulfonyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminosulfonyl}$ , trihalo $\text{C}_{1-6}\text{alkylsulfonyl}$ ,  $\text{di(aryl)C}_{1-6}\text{alkylcarbonyl}$ , thiophenyl $\text{C}_{1-6}\text{alkylcarbonyl}$ , pyridinylcarbonyl or aryl $\text{C}_{1-6}\text{alkylcarbonyl}$

wherein each  $R^9$  is independently selected from phenyl; phenyl substituted with one, two or three substituents independently selected from halo, amino,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, hydroxy $C_{1-4}$ alkyl, hydroxy $C_{1-4}$ alkyloxy, amino $C_{1-4}$ alkyloxy, di( $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyloxy, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl, hydroxy $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyl,  $C_{1-4}$ alkyloxypiperidinyl $C_{1-4}$ alkyl, hydroxy $C_{1-4}$ alkyloxy $C_{1-4}$ alkylpiperazinyl,  $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyl, di(hydroxy $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyl, pyrrolidinyl $C_{1-4}$ alkyloxy, morpholinyl $C_{1-4}$ alkyloxy, or morpholinyl $C_{1-4}$ alkyl; thiophenyl; or thiophenyl substituted with di( $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyloxy, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl, pyrrolidinyl $C_{1-4}$ alkyloxy,  $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyl, di(hydroxy $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyl or morpholinyl $C_{1-4}$ alkyloxy.

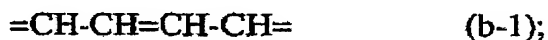
$R^{14}$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, aryl $C_{1-6}$ alkyl, aminocarbonyl, hydroxycarbonyl, amino $C_{1-6}$ alkyl, aminocarbonyl $C_{1-6}$ alkyl, hydroxycarbonyl $C_{1-6}$ alkyl, hydroxyaminocarbonyl,  $C_{1-6}$ alkyloxy carbonyl,  $C_{1-6}$ alkylamino $C_{1-6}$ alkyl or di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

when  $R^{13}$  &  $R^{14}$  are present on the same carbon atom,  $R^{13}$  &  $R^{14}$  together may form a bivalent radical of formula



wherein  $R^{10}$  is hydrogen or aryl;

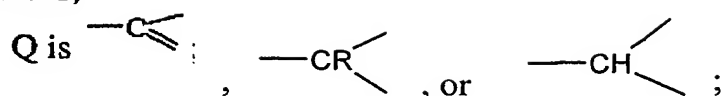
when  $R^{13}$  &  $R^{14}$  are present on adjacent carbon atoms,  $R^{13}$  &  $R^{14}$  together may form a bivalent radical of formula



aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

113. The compound of claim 112 wherein:

n is 0 or 1;



R<sup>12</sup> is hydrogen or nitro;

R<sup>13</sup> is C<sub>1-6</sub>alkyl, arylC<sub>2-6</sub>alkenediyl, furanylcabonyl, naphtalenylcarbonyl, C<sub>1-6</sub>alkylaminocarbonyl, aminosulfonyl, di(C<sub>1-6</sub>alkyl)aminosulfonylaminoC<sub>1-6</sub>alkyl, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-12</sub>alkylsulfonyl, di(C<sub>1-6</sub>alkyl)aminosulfonyl, trihaloC<sub>1-6</sub>alkylsulfonyl, di(aryl)C<sub>1-6</sub>alkylcarbonyl, thiophenylC<sub>1-6</sub>alkylcarbonyl, pyridinylcarbonyl or arylC<sub>1-6</sub>alkylcarbonyl;

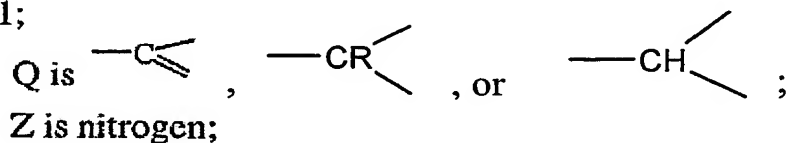
R<sup>14</sup> is hydrogen;

when R<sup>13</sup> & R<sup>14</sup> are present on the same carbon atom R<sup>13</sup> & R<sup>14</sup> together may form a bivalent radical of formula (a-1) wherein R<sup>10</sup> is aryl;

when R<sup>13</sup> & R<sup>14</sup> are present on adjacent carbon atoms R<sup>13</sup> & R<sup>14</sup> together may form a bivalent radical of formula (b-1).

114. The compound of claim 112 wherein:

n is 1;



R<sup>12</sup> is hydrogen;

R<sup>13</sup> is naphtalenylcarbonyl, C<sub>1-12</sub>alkylsulfonyl or di(aryl)C<sub>1-6</sub>alkylcarbonyl;

R<sup>14</sup> is hydrogen.

115. The compound of claim 112 wherein R<sup>12</sup> is H.

116. The compound of claim 112 wherein:

R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl or di(C<sub>1-6</sub>alkyl)amino;

R<sup>13</sup> is hydrogen, C<sub>1-6</sub>alkyl, arylC<sub>2-6</sub>alkenediyl, furanylcabonyl, naphtalenylcarbonyl, -C(O)phenylR<sup>9</sup>, C<sub>1-6</sub>alkylaminocarbonyl, aminosulfonyl, arylaminosulfonyl, aminosulfonylamino, di(C<sub>1-6</sub>alkyl)aminosulfonylamino, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-12</sub>alkylsulfonyl, di(C<sub>1-6</sub>alkyl)aminosulfonyl or pyridinylcarbonyl wherein each R<sup>9</sup> is independently selected from phenyl; phenyl substituted with one, two or three substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy; or thiophenyl;

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, arylC<sub>1-6</sub>alkyl, aminocarbonyl, aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl or di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl.

117. The compound of claim 112 wherein:

R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl or di(C<sub>1-6</sub>alkyl)amino;

R<sup>13</sup> is hydrogen, C<sub>1-6</sub>alkyl, arylC<sub>2-6</sub>alkenediyl, furanylcabonyl, naphtalenylcarbonyl, -C(O)phenylR<sup>9</sup>, C<sub>1-6</sub>alkylaminocarbonyl, aminosulfonyl, arylaminosulfonyl, aminosulfonylamino, di(C<sub>1-6</sub>alkyl)aminosulfonylamino, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-12</sub>alkylsulfonyl, di(C<sub>1-6</sub>alkyl)aminosulfonyl or pyridinylcarbonyl wherein each R<sup>9</sup> is independently selected from phenyl; phenyl substituted with one, two or three substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy; or thiophenyl; and

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, arylC<sub>1-6</sub>alkyl, aminocarbonyl, aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl or di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl.

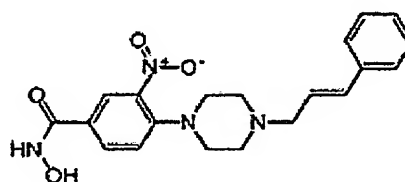
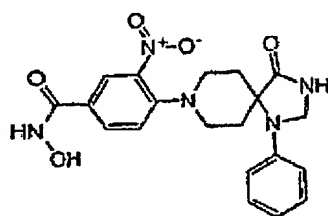
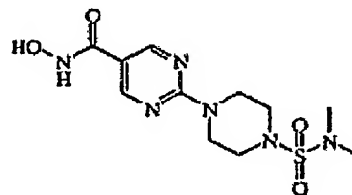
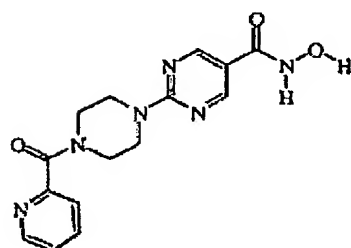
118. The compound of claim 112 wherein:

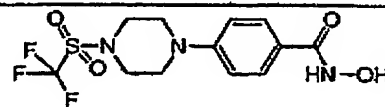
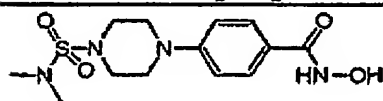
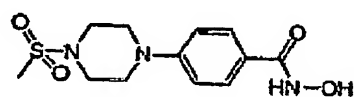
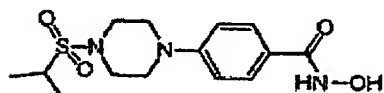
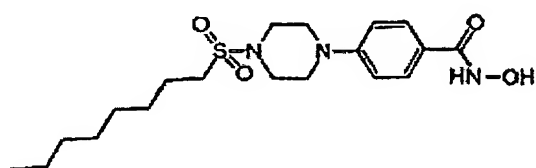
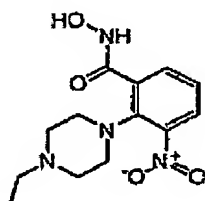
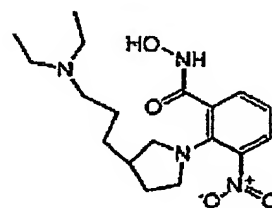
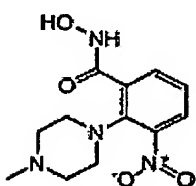
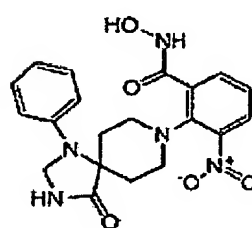
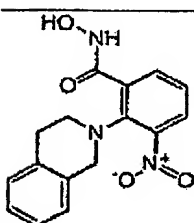
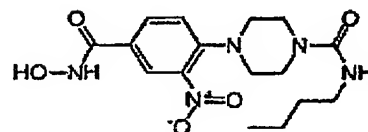
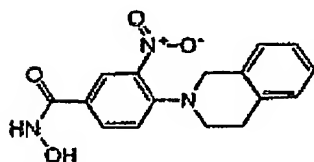
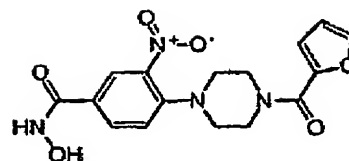
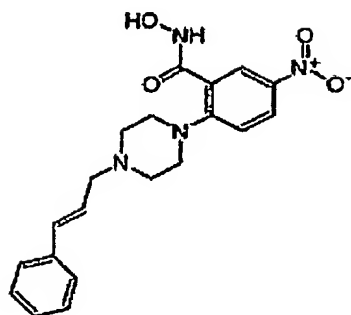
$n$  is 0 or 1;  $Q$  is  $\text{—C}\equiv$ ; or  
 $\text{—NHC(O)C}_{1-6}\text{alkanediylSH}$ ;  $R^{12}$  is hydrogen or nitro;  $R^{13}$  is  $\text{C}_{1-6}\text{alkyl}$ ,  
 $\text{arylC}_{2-6}\text{alkenediyl}$ ,  $\text{furanlylcarbonyl}$ ,  $\text{naphthalenylcarbonyl}$ ,  $\text{C}_{1-6}\text{alkylaminocarbonyl}$ ,  
 $\text{aminosulfonyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminosulfonylaminoC}_{1-6}\text{alkyl}$ ,  
 $\text{di(C}_{1-6}\text{alkyl)aminoC}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-12}\text{alkylsulfonyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminosulfonyl}$ ,  
 $\text{trihaloC}_{1-6}\text{alkylsulfonyl}$ ,  $\text{di(aryl)C}_{1-6}\text{alkylcarbonyl}$ ,  $\text{thiophenylC}_{1-6}\text{alkylcarbonyl}$ ,  
 $\text{pyridinylcarbonyl}$  or  $\text{arylC}_{1-6}\text{alkylcarbonyl}$ ;  $R^{14}$  is hydrogen; when  $R^{13}$  and  $R^{14}$  are  
 present on the same carbon atom  $R^{13}$  &  $R^{14}$  together may form a bivalent radical of  
 formula (a-1) wherein  $R^{10}$  is aryl; or when  $R^{13}$  &  $R^{14}$  are present on adjacent carbon  
 atoms  $R^{13}$  &  $R^{14}$  together may form a bivalent radical of formula (b-1).

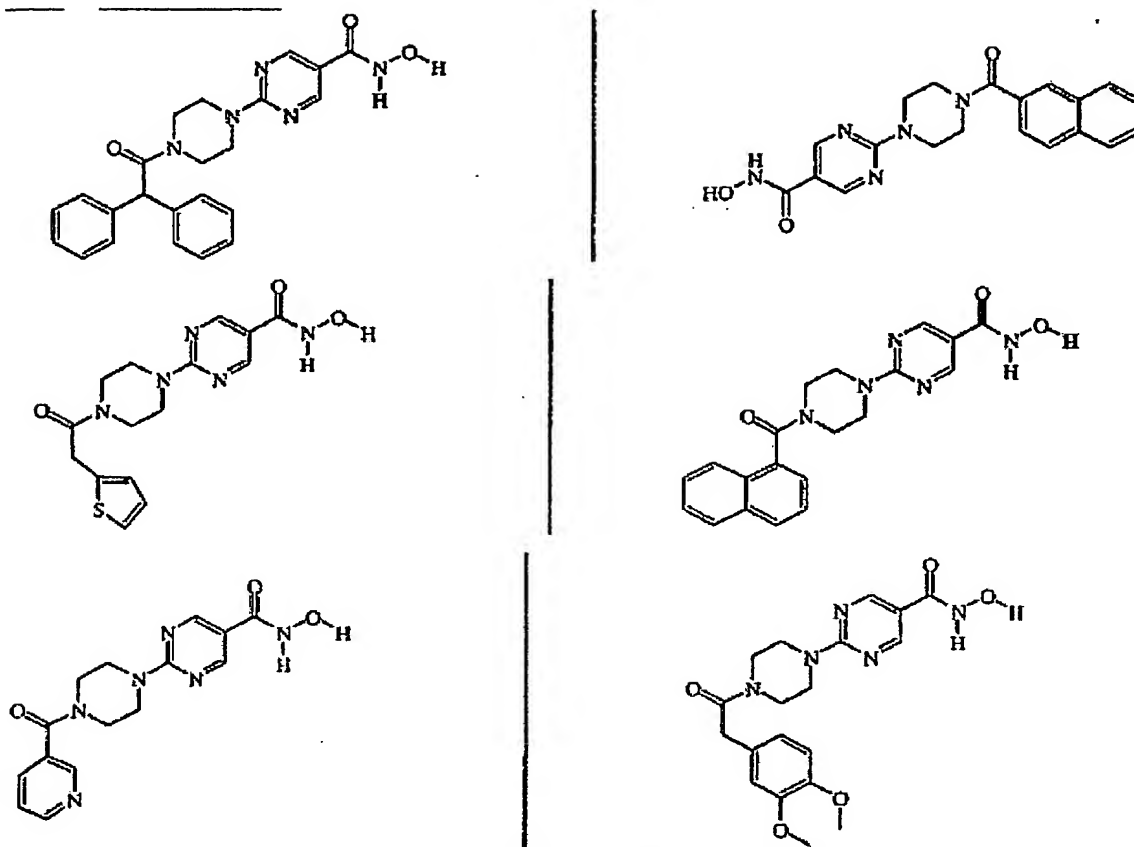
119. The compound of claim 112 wherein:

$n$  is 1;  $Q$  is  $\text{—C}\equiv$ ;  $Z$  is nitrogen;  $R^{12}$  is  
 hydrogen;  $R^{13}$  is  $\text{naphthalenylcarbonyl}$ ,  $\text{C}_{1-12}\text{alkylsulfonyl}$  or  
 $\text{di(aryl)C}_{1-6}\text{alkylcarbonyl}$ ; and  $R^{14}$  is hydrogen.

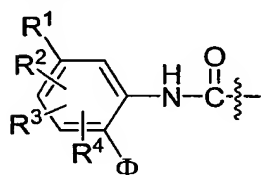
120. The compound of claim 112 that is selected from one of







wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

121. A compound according to claim 112 for use in inhibiting histone deacetylase.

122. A compound according to claim 112 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

123. The compound of claim 122, wherein said treatment is effected by inhibiting histone deacetylase.

124. The compound of claim 122, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

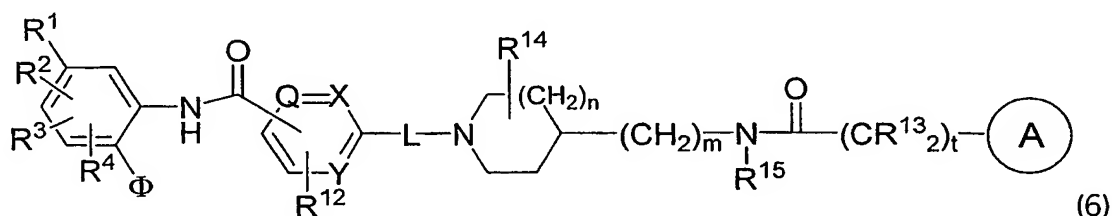
125. The compound of claim 122, wherein said cell proliferative disease is cancer.

126. The compound of claim 125, wherein said cancer is a solid tumor cancer.



127. The compound of claim 125, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
128. A pharmaceutical composition comprising a compound according to claim 112 and a pharmaceutically acceptable carrier.
129. The pharmaceutical composition of claim 128 further comprising a nucleic acid level inhibitor of histone deacetylase.
130. The pharmaceutical composition of claim 129, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
131. The pharmaceutical composition of claim 130, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
132. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 112.
133. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 128.
134. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 129.
135. The method of claim 133, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
136. The method of claim 133, wherein said cell proliferative disease is cancer.
137. The method of claim 136, wherein said cancer is a solid tumor cancer.

138. The method of claim 137, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
139. The method of claim 134, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
140. The method of claim 134, wherein said cell proliferative disease is cancer.
141. The method of claim 140, wherein said cancer is a solid tumor cancer.
142. The method of claim 141, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
143. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

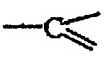
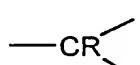
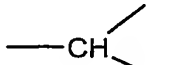
R<sup>1</sup> is H or as defined in claim 1;

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1;

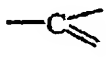
**n is 0, 1, 2 or 3 and when n is 0 then a direct bond is intended;**

**m is 0 or 1 and when m is 0 then a direct bond is intended;**

**t is 0, 1, 2, 3 or 4 and when t is 0 then a direct bond is intended;**

**Q is nitrogen or** , , or  ;

**X is nitrogen or**  ;

**Y is nitrogen or**  ;

R is selected from the group consisting of hydrogen, halogen,  $-NH_2$ , nitro, hydroxy, aryl, heterocyclyl,  $C_3$ - $C_8$ -cycloalkyl, heteroaryl,  $C_1$ - $C_7$ -alkyl, haloalkyl,  $C_1$ - $C_7$ -alkenyl,  $C_1$ - $C_7$ -alkynyl,  $C_1$ - $C_7$ -acyl,  $C_1$ - $C_7$ -alkyl-aryloxy,  $C_1$ - $C_7$ -alkyl-arylsulfanyl,  $C_1$ - $C_7$ -alkyl-arylsulfinyl,  $C_1$ - $C_7$ -alkyl-arylsulfonyl,  $C_1$ - $C_7$ -alkyl-arylaminosulfonyl,  $C_1$ - $C_7$ -alkyl-arylamine,  $C_1$ - $C_7$ -alkynyl- $C(O)$ -amine,  $C_1$ - $C_7$ -alkenyl- $C(O)$ -amine,  $C_1$ - $C_7$ -alkynyl- $R^9$ ,  $C_1$ - $C_7$ -alkenyl- $R^9$  wherein  $R^9$  is hydrogen, hydroxy, amino,  $C_1$ - $C_7$ -alkyl or  $C_1$ - $C_7$ -alkoxy;

$R^{12}$  is hydrogen, halo, hydroxy, amino, nitro,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl, di( $C_{1-6}$ alkyl)amino, hydroxyamino or naphthalenylsulfonylpyrazinyl;

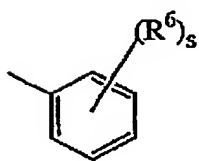
-L- is a direct bond or a bivalent radical selected from  $C_{1-6}$ alkanediyl,  $C_{1-6}$ alkanediyl, amino, carbonyl or aminocarbonyl;

each  $R^{13}$  is independently represents a hydrogen atom and one hydrogen atom can be replaced by a substituent selected from aryl;

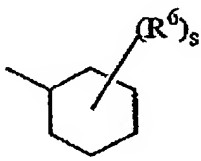
$R^{14}$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, aryl $C_{1-6}$ alkyl, aminocarbonyl, hydroxycarbonyl, amino $C_{1-6}$ alkyl, aminocarbonyl $C_{1-6}$ alkyl, hydroxycarbonyl $C_{1-6}$ alkyl, hydroxyaminocarbonyl,  $C_{1-6}$ alkyloxycarbonyl,  $C_{1-6}$ alkylamino $C_{1-6}$ alkyl or di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

$R^{15}$  is hydrogen,  $C_{1-6}$ alkyl,  $C_{3-10}$ cycloalkyl, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy $C_{1-6}$ alkyl, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl or aryl;

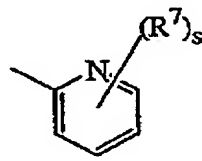
—(A) is a radical selected from



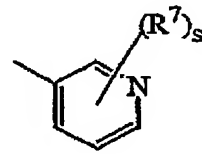
(a-1)



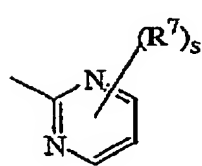
(a-2)



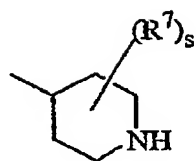
(a-3)



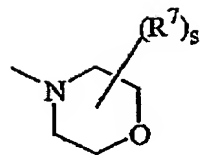
(a-4)



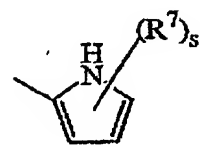
(a-5)



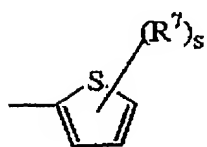
(a-6)



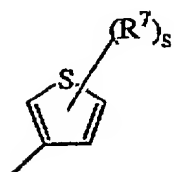
(a-7)



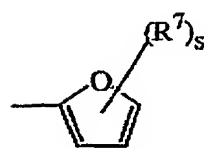
(a-8)



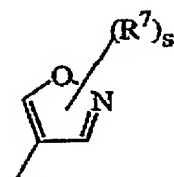
(a-9)



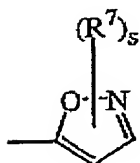
(a-10)



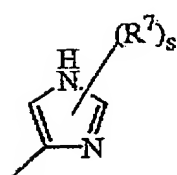
(a-11)



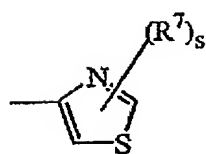
(a-12)



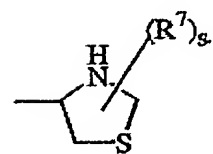
(a-13)



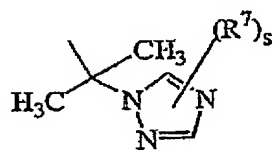
(a-14)



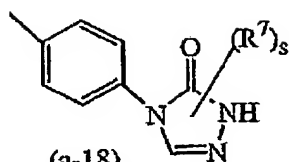
(a-15)



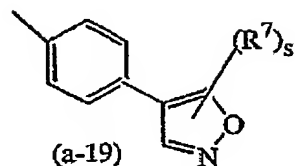
(a-16)



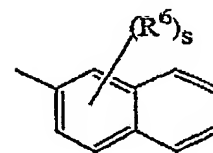
(a-17)



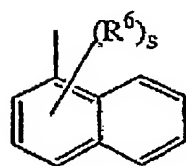
(a-18)



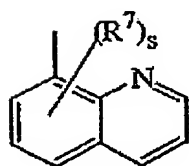
(a-19)



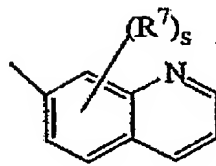
(a-20)



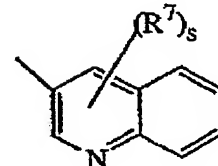
(a-21)



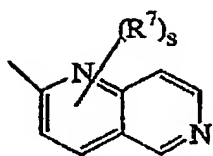
(a-22)



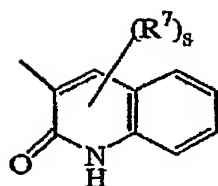
(a-23)



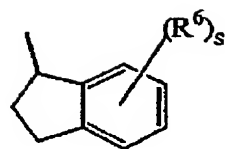
(a-24)



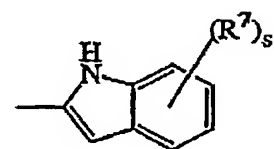
(a-25)



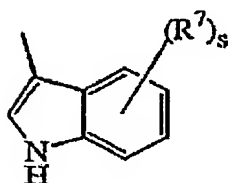
(a-26)



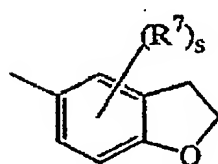
(a-27)



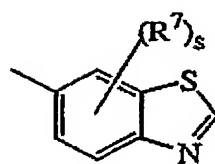
(a-28)



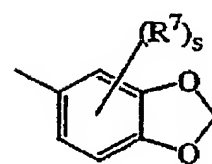
(a-29)



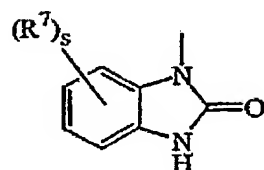
(a-30)



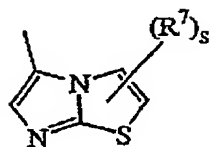
(a-31)



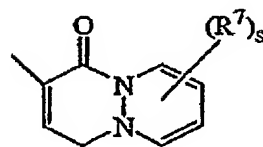
(a-32)



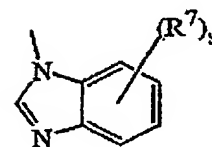
(a-33)



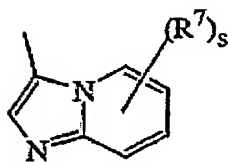
(a-34)



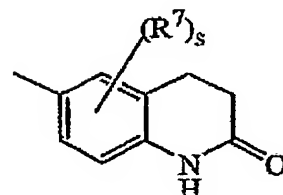
(a-35)



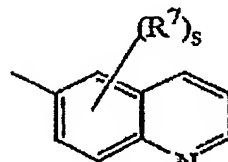
(a-36)



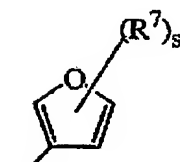
(a-37)



(a-38)



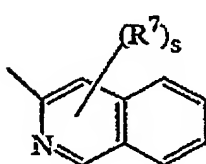
(a-39)



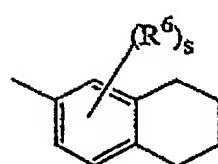
(a-40)



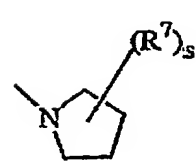
(a-41)



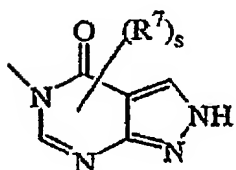
(a-42)



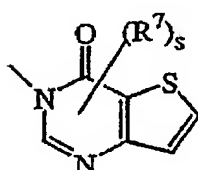
(a-43)



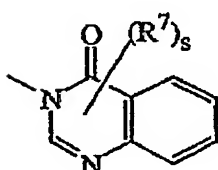
(a-44)



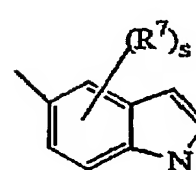
(a-45)



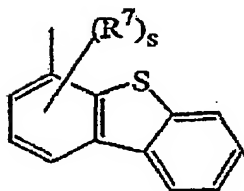
(a-46)



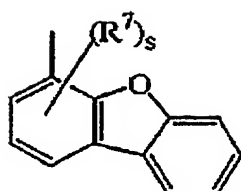
(a-47)



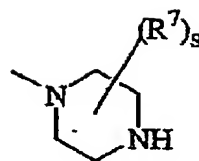
(a-48)



(a-49)



(a-50)



(a-51)

wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;

each  $R^6$  and  $R^7$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino; aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,

di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl,  
 C<sub>1-6</sub>alkyloxypiperidinyl, C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl;  
 oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl;  
 pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl;  
 morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino;  
 morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl;  
 naphthalenylsulfonylpiperazinyl; naphthalenylsulfonylpiperidinyl; naphthalenylsulfonyl;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indole; phenyl; phenyl substituted with one, two or three substituents

independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxycarbonyl, aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, aminosulfonylamino(C<sub>1-4</sub>alkyl)amino, aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano, piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy; aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl, C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(hydroxyC<sub>1-4</sub>alkyl)amino, di(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, furanyl, furanyl substituted with -CH=CH-CH=CH-, pyrrolidinylC<sub>1-4</sub>alkyl, pyrrolidinylC<sub>1-4</sub>alkyloxy, morpholinyl, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl,




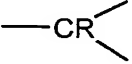
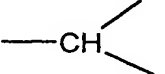
morpholinylC<sub>1-4</sub>alkylamino, morpholinylC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, piperazinyl, C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy, piperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylamino, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylaminoC<sub>1-6</sub>alkyl, tetrahydropyrimidinylpiperazinyl, tetrahydropyrimidinylpiperazinylC<sub>1-4</sub>alkyl, piperidinylaminoC<sub>1-4</sub>alkylamino, piperidinylaminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, pyridinylC<sub>1-4</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkylamino, hydroxyC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino; each R<sup>6</sup> and R<sup>7</sup> can be placed on the nitrogen in replacement of the hydrogen; aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

144. The compound of claim 143 wherein:

n is 1;

m is 0 or 1;

t is 0, 1 or 2;

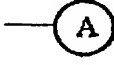
Q is , , or  ;

R<sup>12</sup> is hydrogen or C<sub>1-6</sub>alkyl;

-L- is a direct bond;

R<sup>14</sup> is hydrogen;

R<sup>15</sup> is hydrogen;

 is a radical selected from (a-1), (a-20), (a-25), (a-27), (a-28), (a-29), (a-41) or (a-42);


each s is independently 0, 1, 2 or 3;

each R<sup>6</sup> is independently selected from hydrogen, halo, C<sub>1-6</sub>alkyl or C<sub>1-6</sub>alkyloxy.

145. The compound of claim 143 wherein:

R<sup>15</sup>

$R^5$  is hydrogen,  $C_{1-6}$ alkyl,  $C_{3-10}$ cycloalkyl, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy $C_{1-6}$ alkyl or di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

— is a radical selected from (a-1), (a-2), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-27), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42) (a-43) or (a-44);

each  $R^6$  and  $R^7$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;

$C_{1-6}$ alkyloxy $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkylsulfonyl; cyano $C_{1-6}$ alkyl; hydroxy $C_{1-6}$ alkyl; hydroxy $C_{1-6}$ alkyloxy; hydroxy $C_{1-6}$ alkylamino; amino $C_{1-6}$ alkyloxy; di( $C_{1-6}$ alkyl)aminocarbonyl; di(hydroxy $C_{1-6}$ alkyl)amino; aryl $C_{1-6}$ alkyl)amino; di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyloxy; di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkylamino; arylsulfonyl; arylsulfonylamino; aryloxy; aryl $C_{2-6}$ alkenediyl; di( $C_{1-6}$ alkyl)amino; di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl; cyano; thiophenyl; thiophenyl substituted with di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl, di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl,  $C_{1-6}$ alkylpiperazinyl $C_{1-6}$ alkyl or

di(hydroxy $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl; furanyl; imidazolyl;  $C_{1-6}$ alkyltriazolyl; tetrazolyl; pyrrolidinyl; piperidinyl $C_{1-6}$ alkyloxy; morpholinyl;

$C_{1-6}$ alkylmorpholinyl; morpholinyl $C_{1-6}$ alkyloxy;

morpholinyl $C_{1-6}$ alkyl;  $C_{1-6}$ alkylpiperazinyl;  $C_{1-6}$ alkylpiperazinyl $C_{1-6}$ alkyloxy;

$C_{1-6}$ alkylpiperazinyl $C_{1-6}$ alkyl;  $C_{1-6}$ alkylpiperazinylsulfonyl;

aminosulfonylpiperazinyl $C_{1-6}$ alkyloxy; aminosulfonylpiperazinyl;

aminosulfonylpiperazinyl $C_{1-6}$ alkyl; di( $C_{1-6}$ alkyl)aminosulfonylpiperazinyl;

di( $C_{1-6}$ alkyl)aminosulfonylpiperazinyl $C_{1-6}$ alkyl; hydroxy $C_{1-6}$ alkylpiperazinyl;

hydroxy $C_{1-6}$ alkylpiperazinyl $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxypiperidinyl;

$C_{1-6}$ alkyloxypiperidinyl $C_{1-6}$ alkyl; hydroxy $C_{1-6}$ alkyloxy $C_{1-6}$ alkylpiperazinyl;

hydroxy $C_{1-6}$ alkyloxy $C_{1-6}$ alkylpiperazinyl $C_{1-6}$ alkyl;

(hydroxy $C_{1-6}$ alkyl)( $C_{1-6}$ alkyl)amino; (hydroxy $C_{1-6}$ alkyl)( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; phenyl substituted with one, two or three substituents independently selected from halo, amino, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl, C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, pyrrolidinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylamino, di(hydroxyC<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino.

146. The compound of claim 143 wherein:

t = 0;


m = 0;

R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl or di(C<sub>1-6</sub>alkyl)amino;

-L- is a direct bond or a bivalent radical selected from C<sub>1-6</sub>alkanediyl, C<sub>1-6</sub>alkanediylloxy, amino or carbonyl;

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, arylC<sub>1-6</sub>alkyl, aminocarbonyl, aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl or di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;

R<sup>15</sup> is hydrogen;

— is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) or (a-51);

each s is independently 0, 1, 2, 3 or 4;

R<sup>6</sup> is hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; hydroxyC<sub>1-6</sub>alkyl; aryloxy; di(C<sub>1-6</sub>alkyl)amino; cyano; thiophenyl; furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl; C<sub>1-6</sub>alkyloxypiperidinyl; pyrazolyl; pyrazolyl substituted with one or two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy or trifluoromethyl;

$R^7$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxycarbonyl;  $C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy; di( $C_{1-6}$ alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl.

147. The compound of claim 143 wherein:

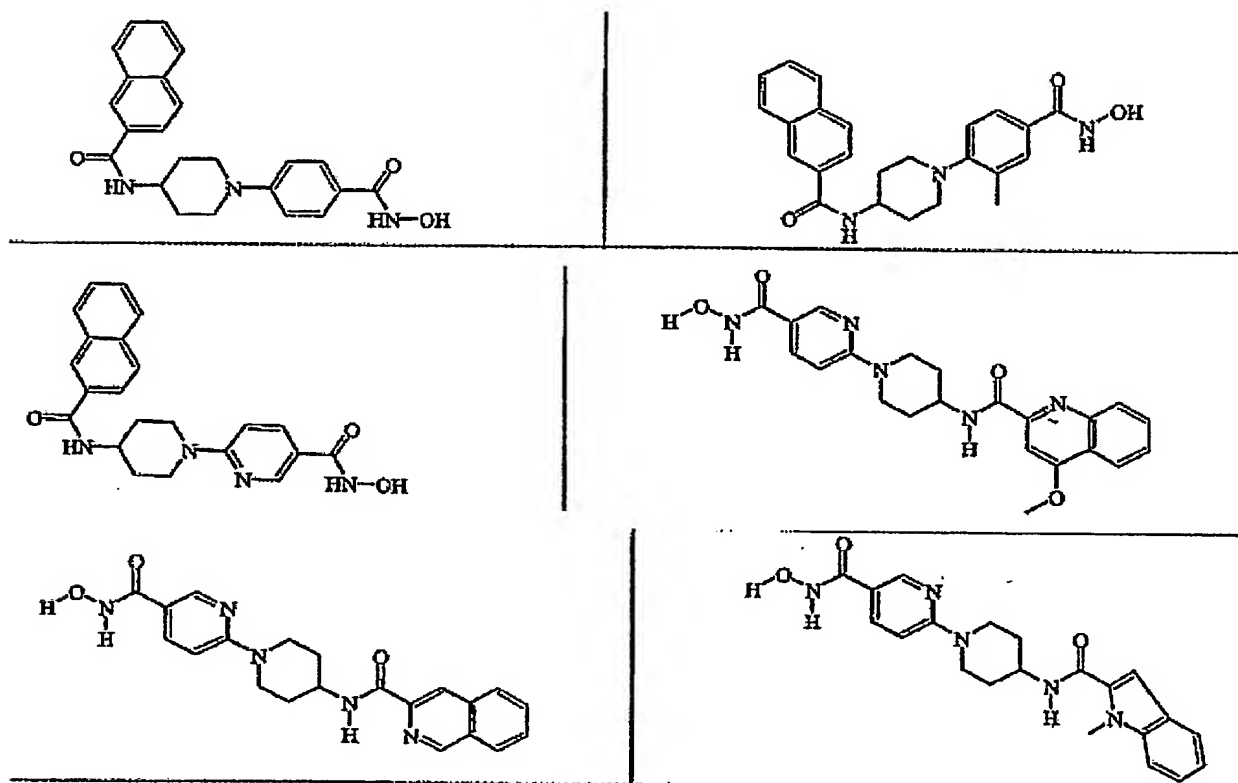
$n$  is 1;  $m$  is 0 or 1;  $t$  is 0, 1 or 2;  $Q$  is  $-\text{C}\equiv$ ,  $-\text{CR}<$ , or  $-\text{CH}<$ ;

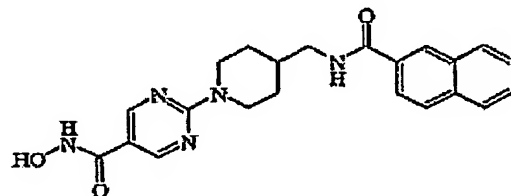
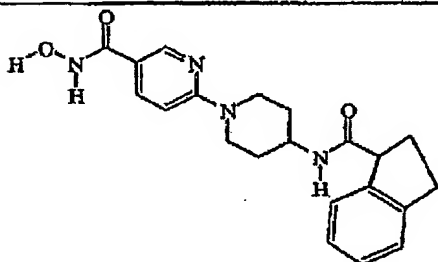
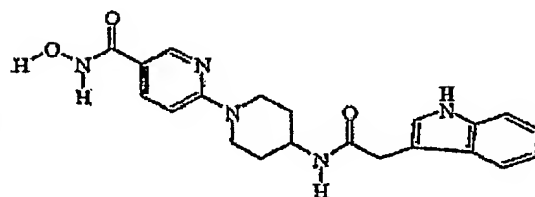
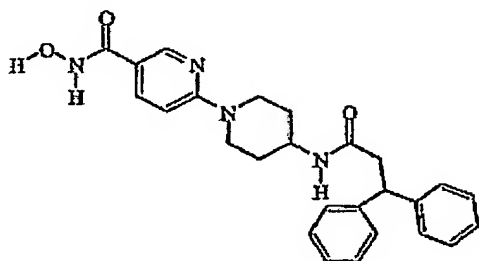
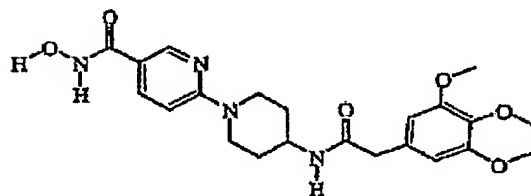
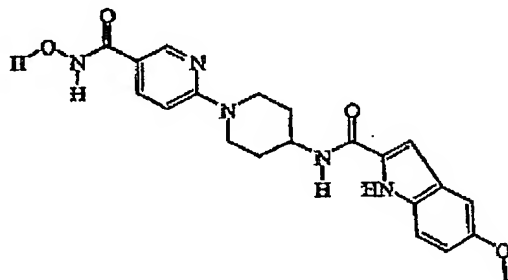
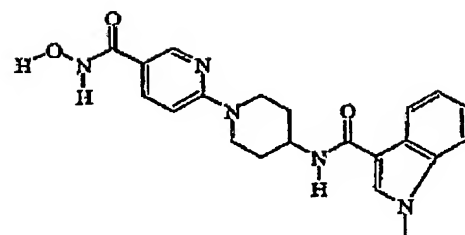
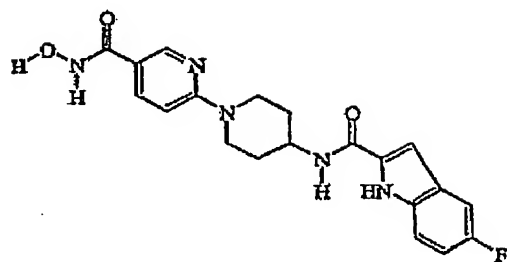
$R^{12}$  is hydrogen;  $-L-$  is a direct bond;

$R^{14}$  and  $R^{15}$  are H;

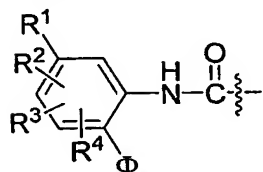
$\text{---}\textcircled{\text{A}}$  is a radical selected from (a-1), (a-20), (a-27), (a-28), (a-29), (a-41) or (a-42); each  $s$  is independently 0, 1 or 2; and each  $R^6$  is independently selected from hydrogen, halo,  $C_{1-6}$ alkyl or  $C_{1-6}$ alkyloxy.

148. The compound of claim 143 that is selected from one of





wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

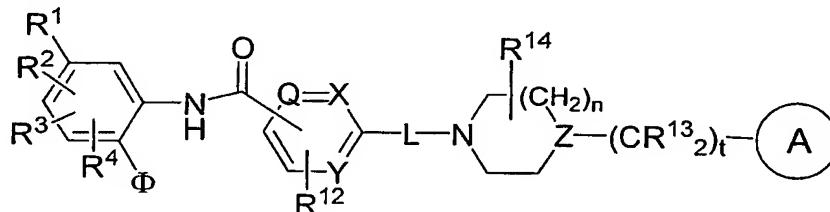
149. The compound of claim 143 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

150. A compound according to claim 143 for use in inhibiting histone deacetylase.

151. A compound according to claim 143 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

152. The compound of claim 151, wherein said treatment is effected by inhibiting histone deacetylase.
153. The compound of claim 151, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
154. The compound of claim 151, wherein said cell proliferative disease is cancer.
155. The compound of claim 154, wherein said cancer is a solid tumor cancer.
156. The compound of claim 154, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
157. A pharmaceutical composition comprising a compound according to claim 143 and a pharmaceutically acceptable carrier.
158. The pharmaceutical composition of claim 157 further comprising a nucleic acid level inhibitor of histone deacetylase.
159. The pharmaceutical composition of claim 158, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
160. The pharmaceutical composition of claim 159, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
161. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 143.
162. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 157
163. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 158.

164. The method of claim 162, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
165. The method of claim 162, wherein said cell proliferative disease is cancer.
166. The method of claim 165, wherein said cancer is a solid tumor cancer.
167. The method of claim 166, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
168. The method of claim 163, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
169. The method of claim 163, wherein said cell proliferative disease is cancer.
170. The method of claim 169, wherein said cancer is a solid tumor cancer.
171. The method of claim 170, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
172. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is  $\text{-NH}_2$  or  $\text{-OH}$ ;


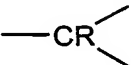
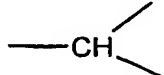
$R^1$  is H or as defined in claim 1;

$R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1;




n is 0, 1, 2 or 3 and when n is 0 then a direct bond is intended;

t is 0, 1, 2, 3 or 4 and when t is 0 then a direct bond is intended;

Q is nitrogen or , , or ;

X is nitrogen or ;

Y is nitrogen or ;

Z is nitrogen or ;

R is selected from the group consisting of hydrogen, halogen, -NH<sub>2</sub>, nitro, hydroxy, aryl, heterocyclyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl, heteroaryl, C<sub>1</sub>-C<sub>7</sub>-alkyl, haloalkyl, C<sub>1</sub>-C<sub>7</sub>-alkenyl, C<sub>1</sub>-C<sub>7</sub>-alkynyl, C<sub>1</sub>-C<sub>7</sub>-acyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-aryloxy, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfanyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfinyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylsulfonyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylaminosulfonyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylamine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkenyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-R<sup>9</sup>, C<sub>1</sub>-C<sub>7</sub>-alkenyl-R<sup>9</sup> wherein R<sup>9</sup> is hydrogen, hydroxy, amino, C<sub>1</sub>-C<sub>7</sub>-alkyl or C<sub>1</sub>-C<sub>7</sub>-alkoxy;

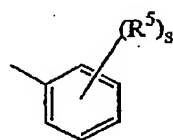
R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, trifluoromethyl, di(C<sub>1-6</sub>-alkyl)amino, hydroxyamino or naphthalenylsulfonylpyrazinyl;

-L- is a direct bond or a bivalent radical selected from C<sub>1-6</sub>-alkanediyl, C<sub>1-6</sub>-alkyloxy, amino, carbonyl or aminocarbonyl;

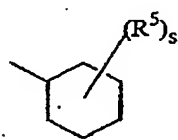
each R<sup>13</sup> independently represents a hydrogen atom and one hydrogen atom can be replaced by a substituent selected from aryl;

R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyC<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyl, C<sub>1-6</sub>-alkyloxy, arylC<sub>1-6</sub>-alkyl, aminocarbonyl, hydroxycarbonyl, aminoC<sub>1-6</sub>-alkyl, aminocarbonylC<sub>1-6</sub>-alkyl, hydroxycarbonylC<sub>1-6</sub>-alkyl, hydroxyaminocarbonyl, C<sub>1-6</sub>-alkyloxycarbonyl, C<sub>1-6</sub>-alkylaminoC<sub>1-6</sub>-alkyl or di(C<sub>1-6</sub>-alkyl)aminoC<sub>1-6</sub>-alkyl;

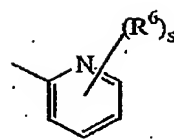
—(A) is a radical selected from



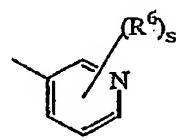
(a-1)



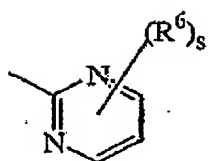
(a-2)



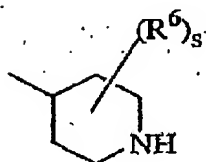
(a-3)



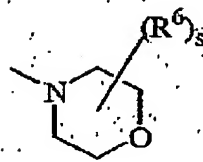
(a-4)



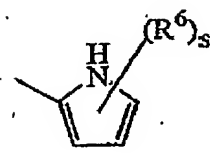
(a-5)



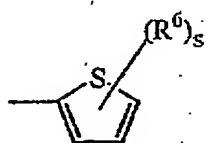
(a-6)



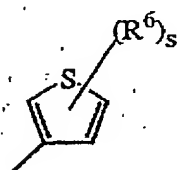
(a-7)



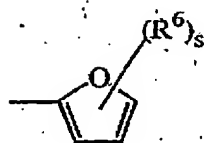
(a-8)



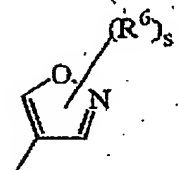
(a-9)



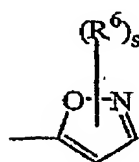
(a-10)



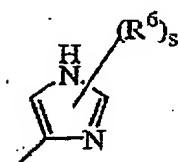
(a-11)



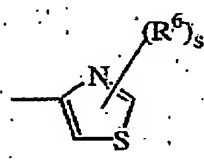
(a-12)



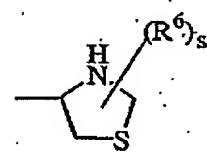
(a-13)



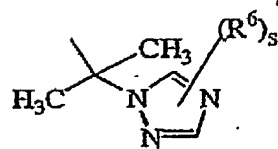
(a-14)



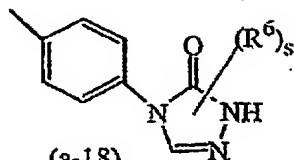
(a-15)



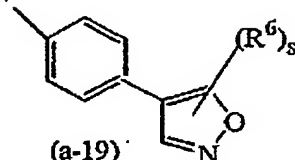
(a-16)



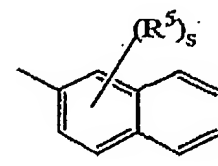
(a-17)



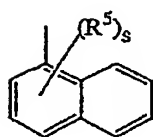
(a-18)



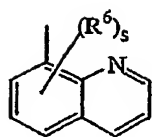
(a-19)



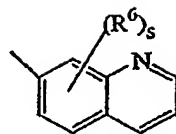
(a-20)



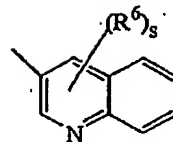
(a-21)



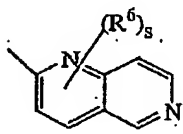
(a-22)



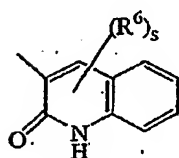
(a-23)



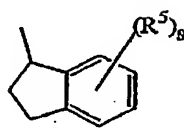
(a-24)



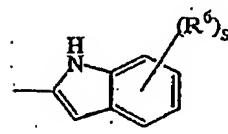
(a-25)



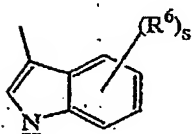
(a-26)



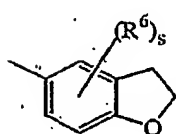
(a-27)



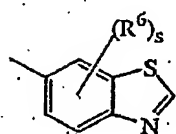
(a-28)



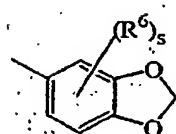
(a-29)



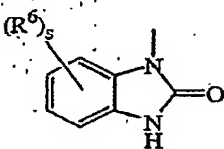
(a-30)



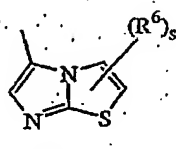
(a-31)



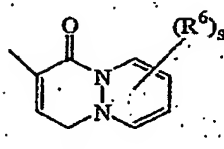
(a-32)



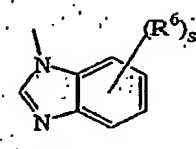
(a-33)



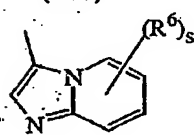
(a-34)



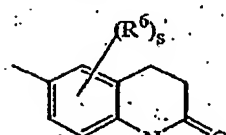
(a-35)



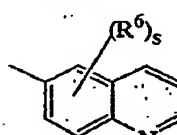
(a-36)



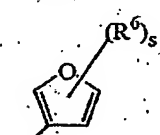
(a-37)



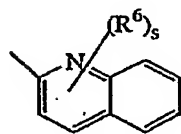
(a-38)



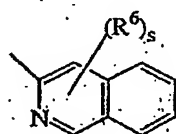
(a-39)



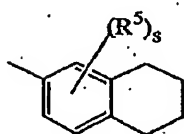
(a-40)



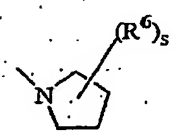
(a-41)



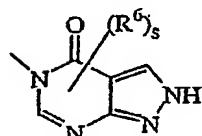
(a-42)



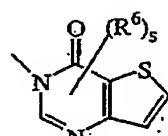
(a-43)



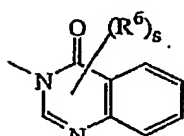
(a-44)



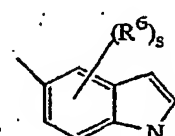
(a-45)



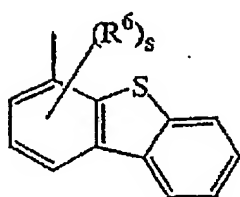
(a-46)



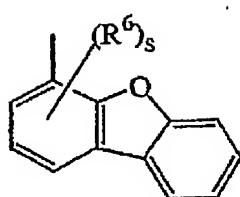
(a-47)



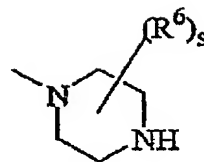
(a-48)



(a-49)



(a-50)



(a-51)

wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;

each  $R^5$  and  $R^6$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxy carbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino; aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;

di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl;  
 thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl,  
 C<sub>1-6</sub>alkyloxy piperidinyl, C<sub>1-6</sub>alkyloxy piperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl;  
 oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl;  
 pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl;  
 morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino;  
 morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl;  
 naphthalenylsulfonylpiperazinyl; naphthalenylsulfonylpiperidinyl; naphthalenylsulfonyl;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy piperidinyl;  
 C<sub>1-6</sub>alkyloxy piperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;

hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indole; phenyl; phenyl substituted with one, two or three substituents  
 independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy,  
 hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy,  
 C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxycarbonyl,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano,  
 piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,

$C_{1-4}$ alkyloxy piperidinyl  $C_{1-4}$ alkyl, hydroxy  $C_{1-4}$ alkyloxy  $C_{1-4}$ alkyl piperazinyl,  
 hydroxy  $C_{1-4}$ alkyloxy  $C_{1-4}$ alkyl piperazinyl  $C_{1-4}$ alkyl,  
 (hydroxy  $C_{1-4}$ alkyl)( $C_{1-4}$ alkyl)amino, (hydroxy  $C_{1-4}$ alkyl)( $C_{1-4}$ alkyl)amino  $C_{1-4}$ alkyl,  
 di(hydroxy  $C_{1-4}$ alkyl)amino, di(hydroxy  $C_{1-4}$ alkyl)amino  $C_{1-4}$ alkyl, furanyl, furanyl  
 substituted with  $-CH=CH-CH=CH-$ , pyrrolidinyl  $C_{1-4}$ alkyl, pyrrolidinyl  $C_{1-4}$ alkyloxy,  
 morpholinyl, morpholinyl  $C_{1-4}$ alkyloxy, morpholinyl  $C_{1-4}$ alkyl,  
 morpholinyl  $C_{1-4}$ alkylamino, morpholinyl  $C_{1-4}$ alkylamino  $C_{1-4}$ alkyl, piperazinyl,  
 $C_{1-4}$ alkyl piperazinyl,  $C_{1-4}$ alkyl piperazinyl  $C_{1-4}$ alkyloxy, piperazinyl  $C_{1-4}$ alkyl,  
 $C_{1-4}$ alkyl piperazinyl  $C_{1-4}$ alkyl,  $C_{1-4}$ alkyl piperazinyl  $C_{1-4}$ alkylamino,  
 $C_{1-4}$ alkyl piperazinyl  $C_{1-4}$ alkylamino  $C_{1-6}$ alkyl, tetrahydropyrimidinyl piperazinyl,  
 tetrahydropyrimidinyl piperazinyl  $C_{1-4}$ alkyl, piperidinylamino  $C_{1-4}$ alkylamino,  
 piperidinylamino  $C_{1-4}$ alkylamino  $C_{1-4}$ alkyl,  
 ( $C_{1-4}$ alkyl piperidinyl)(hydroxy  $C_{1-4}$ alkyl)amino  $C_{1-4}$ alkylamino,  
 ( $C_{1-4}$ alkyl piperidinyl)(hydroxy  $C_{1-4}$ alkyl)amino  $C_{1-4}$ alkylamino  $C_{1-4}$ alkyl,  
 pyridinyl  $C_{1-4}$ alkyloxy,  
 hydroxy  $C_{1-4}$ alkylamino, hydroxy  $C_{1-4}$ alkylamino  $C_{1-4}$ alkyl,  
 di( $C_{1-4}$ alkyl)amino  $C_{1-4}$ alkylamino, aminothiadiazolyl,  
 aminosulfonyl piperazinyl  $C_{1-4}$ alkyloxy, or thiophenyl  $C_{1-4}$ alkylamino;

each  $R^5$  and  $R^6$  can be placed on the nitrogen in replacement of the hydrogen;

aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

173. The compound of claim 172 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 172 wherein:

$n$  is 1 or 2;


$t$  is 0, 1, 2 or 4;

$Q$  is  $-\text{C}=\text{C}-$ ;

$R^2$  is hydrogen or nitro;

-L- is a direct bond or a bivalent radical selected from  $C_{1-6}$ alkanediyl;

$R^4$  is hydrogen;

— is a radical selected from (a-1), (a-2), (a-3), (a-5), (a-6), (a-11), (a-18), (a-20), (a-21), (a-32), (a-33), (a-47) or (a-51);

each s is independently 0, 1, 2, or 4;

each  $R^5$  and  $R^6$  are independently selected from hydrogen; halo; trihalo $C_{1-6}$ alkyl;

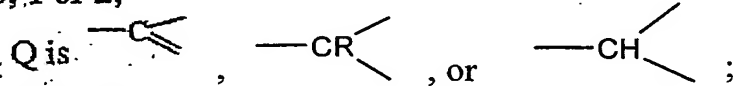
$C_{1-6}$ alkyl;  $C_{1-6}$ alkyl substituted with aryl and  $C_{3-10}$ cycloalkyl;  $C_{1-6}$ alkyloxy;

$C_{1-6}$ alkylcarbonyl; benzofuranyl; naphthalenylsulfonyl; pyridinyl substituted with aryloxy; phenyl; or phenyl substituted with one substituent independently selected from hydroxy $C_{1-4}$ alkyl or morpholinyl $C_{1-4}$ alkyl.

174. The compound of claim 170 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 172 wherein:

n is 1;

t is 0, 1 or 2;



X is nitrogen;


Y is nitrogen;

$R^2$  is hydrogen;

-L- is a direct bond;

each  $R^3$  independently represents a hydrogen atom;

$R^4$  is hydrogen;

— is a radical selected from (a-6), (a-11), (a-20), (a-47) or (a-51);

each s is independently 0, 1, or 4;

each  $R^5$  and  $R^6$  are independently selected from hydrogen;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy; naphthalenylsulfonyl; or phenyl substituted with hydroxy $C_{1-4}$ alkyl or morpholinyl $C_{1-4}$ alkyl.

175. The compound of claim 172 wherein L is a direct bond.



176. The compound of claim 172 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 172 wherein:

t is 1, 2, 3, or 4;

$R^2$  is hydrogen, halo, hydroxy, amino, nitro,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl or  $di(C_{1-6}alkyl)amino$ ;

-L- is a direct bond or a bivalent radical selected from  $C_{1-6}alkanediyl$ ,  $C_{1-6}alkanediyoxy$ , amino or carbonyl;

$R^4$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}alkyl$ ,  $C_{1-6}alkyl$ ,  $C_{1-6}alkyloxy$ , aryl $C_{1-6}alkyl$ , aminocarbonyl, amino $C_{1-6}alkyl$ ,  $C_{1-6}alkylaminoC_{1-6}alkyl$  or  $di(C_{1-6}alkyl)aminoC_{1-6}alkyl$ ;

— $\bigcirc^A$  is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) and (a-51);

each s is independently 0, 1, 2, 3 or 4;

$R^5$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}alkyl$ ; trihalo $C_{1-6}alkyloxy$ ;  $C_{1-6}alkyl$ ;  $C_{1-6}alkyloxy$ ;  $C_{1-6}alkylcarbonyl$ ;  $C_{1-6}alkyloxy carbonyl$ ;

$C_{1-6}alkylsulfonyl$ ; hydroxy $C_{1-6}alkyl$ ; aryloxy;  $di(C_{1-6}alkyl)amino$ ; cyano;

thiophenyl; furanyl; furanyl substituted with hydroxy $C_{1-6}alkyl$ ; benzofuranyl;

imidazolyl; oxazolyl; oxazolyl substituted with aryl and  $C_{1-6}alkyl$ ;

$C_{1-6}alkyltriazolyl$ ; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl;

$C_{1-6}alkylmorpholinyl$ ; piperazinyl;

$C_{1-6}alkylpiperazinyl$ ; hydroxy $C_{1-6}alkylpiperazinyl$ ;

$C_{1-6}alkyloxypiperidinyl$ ; pyrazolyl; pyrazolyl substituted with one or two

substituents selected from  $C_{1-6}alkyl$  or trihalo $C_{1-6}alkyl$ ; pyridinyl; pyridinyl

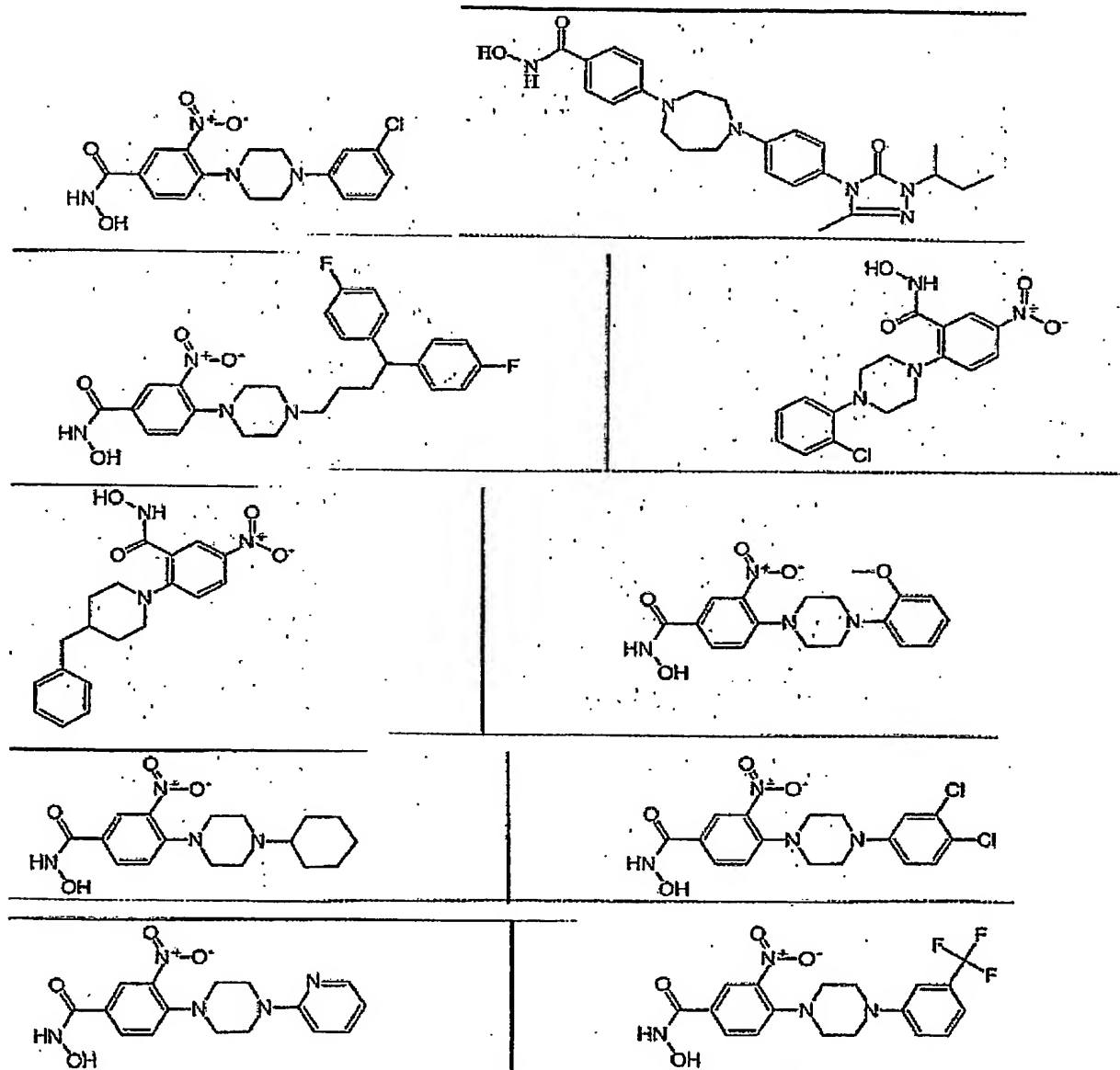
substituted with  $C_{1-6}alkyloxy$ , aryloxy or aryl; pyrimidinyl; quinolinyl; indole;

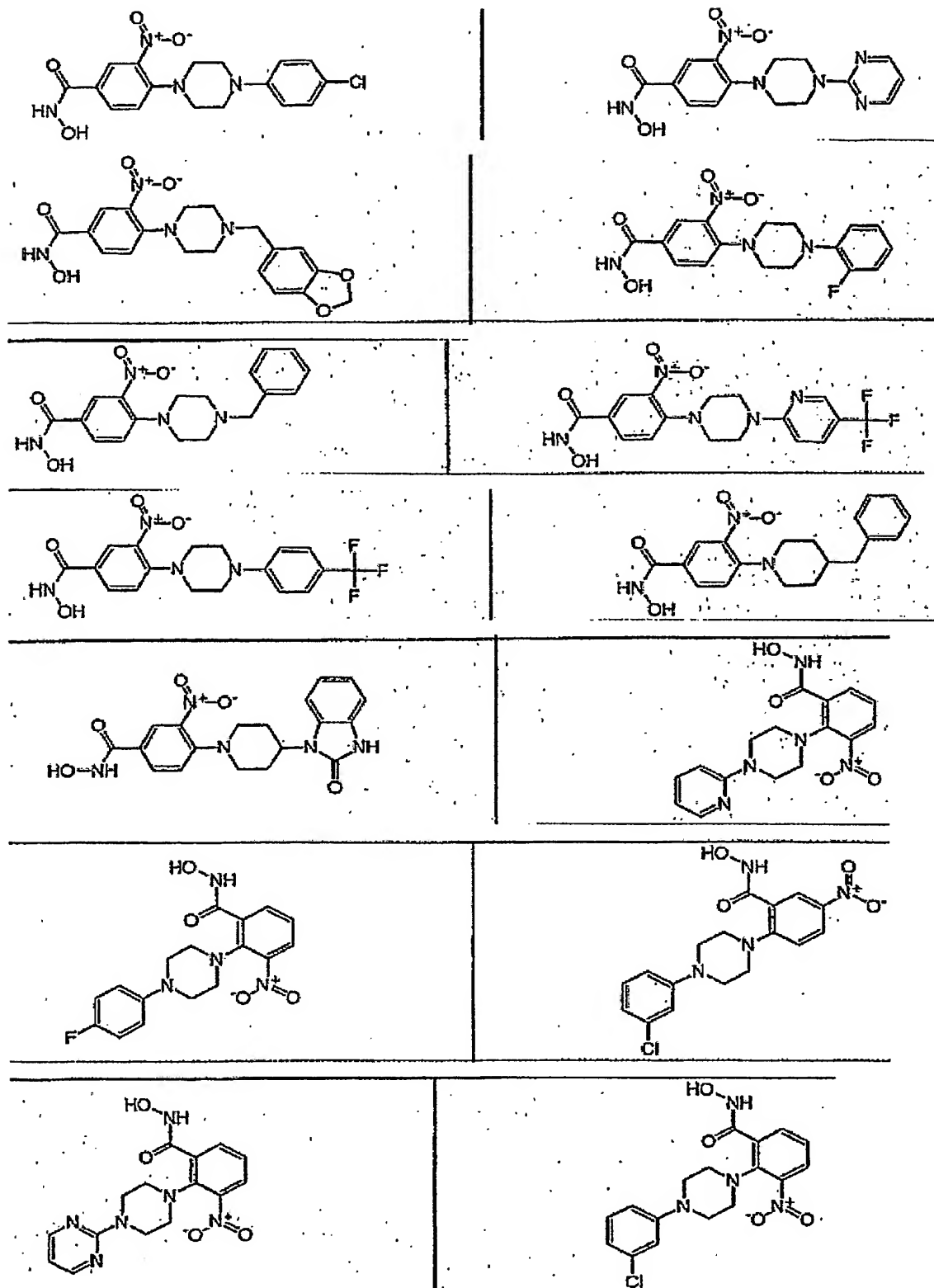
phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}alkyl$ ,  $C_{1-6}alkyloxy$  or trifluoromethyl;

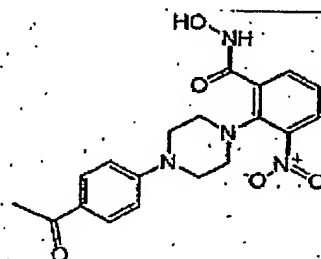
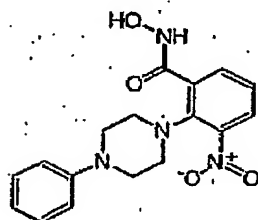
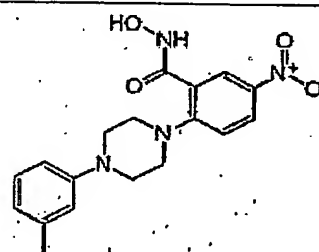
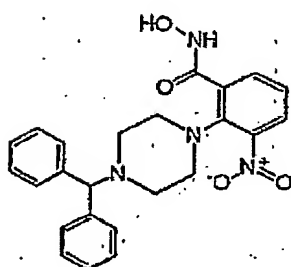
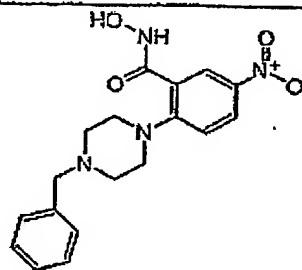
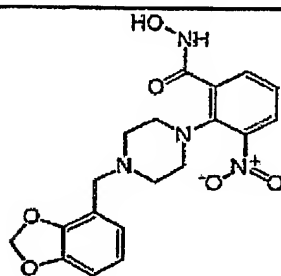
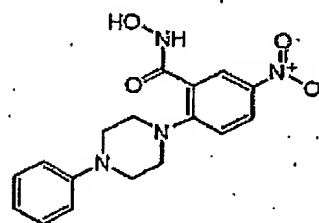
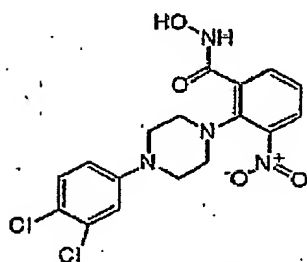
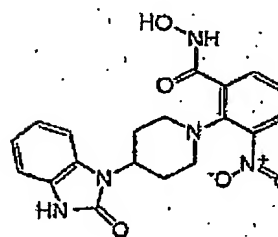
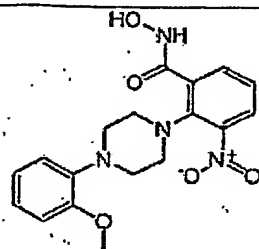
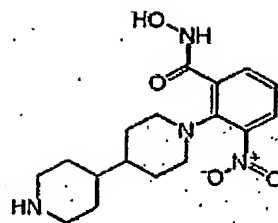
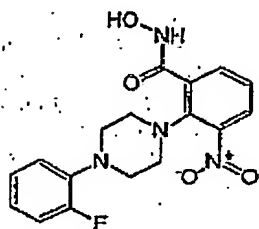
$R^6$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxycarbonyl;

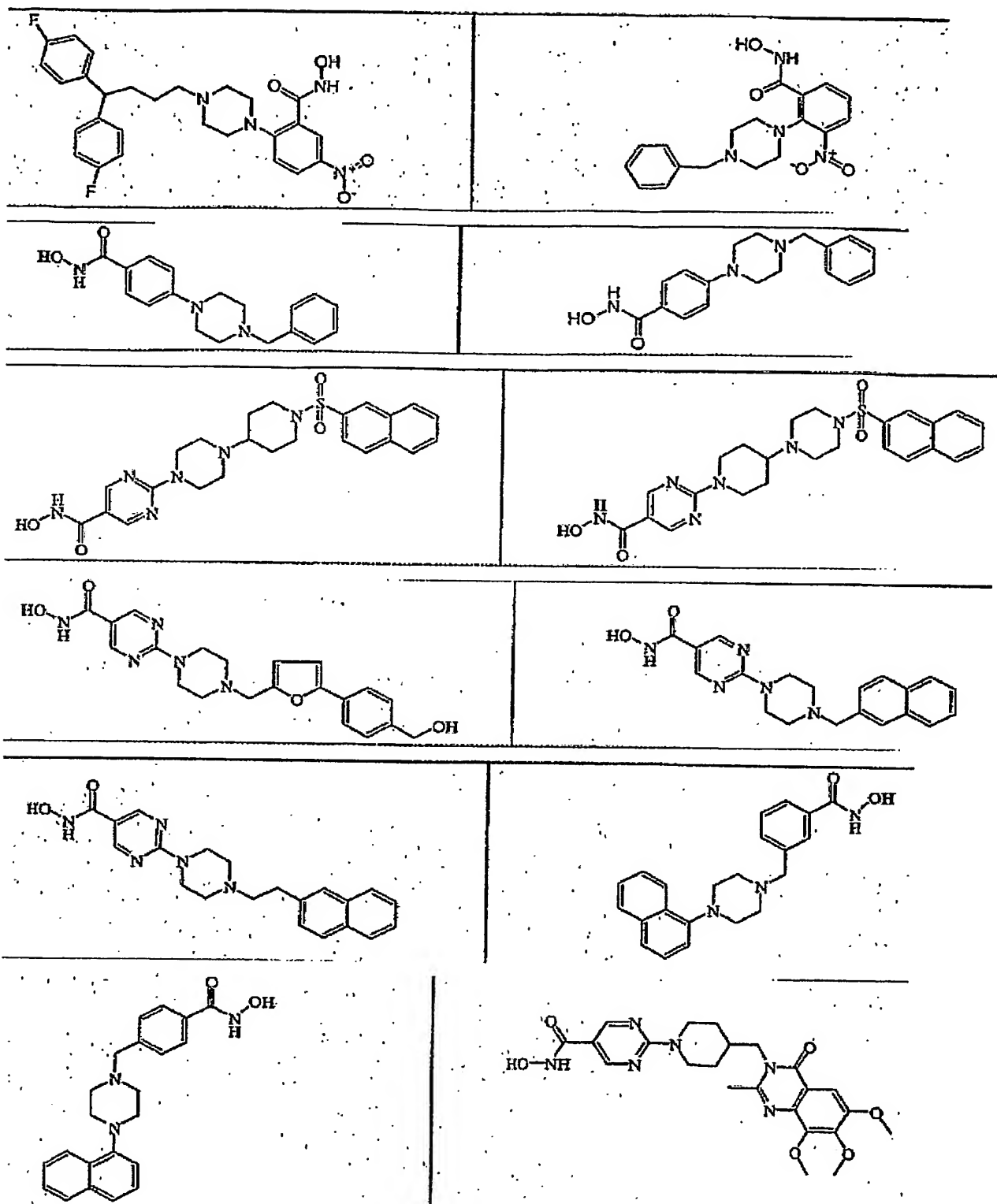
$C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy; di( $C_{1-6}$ alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl.

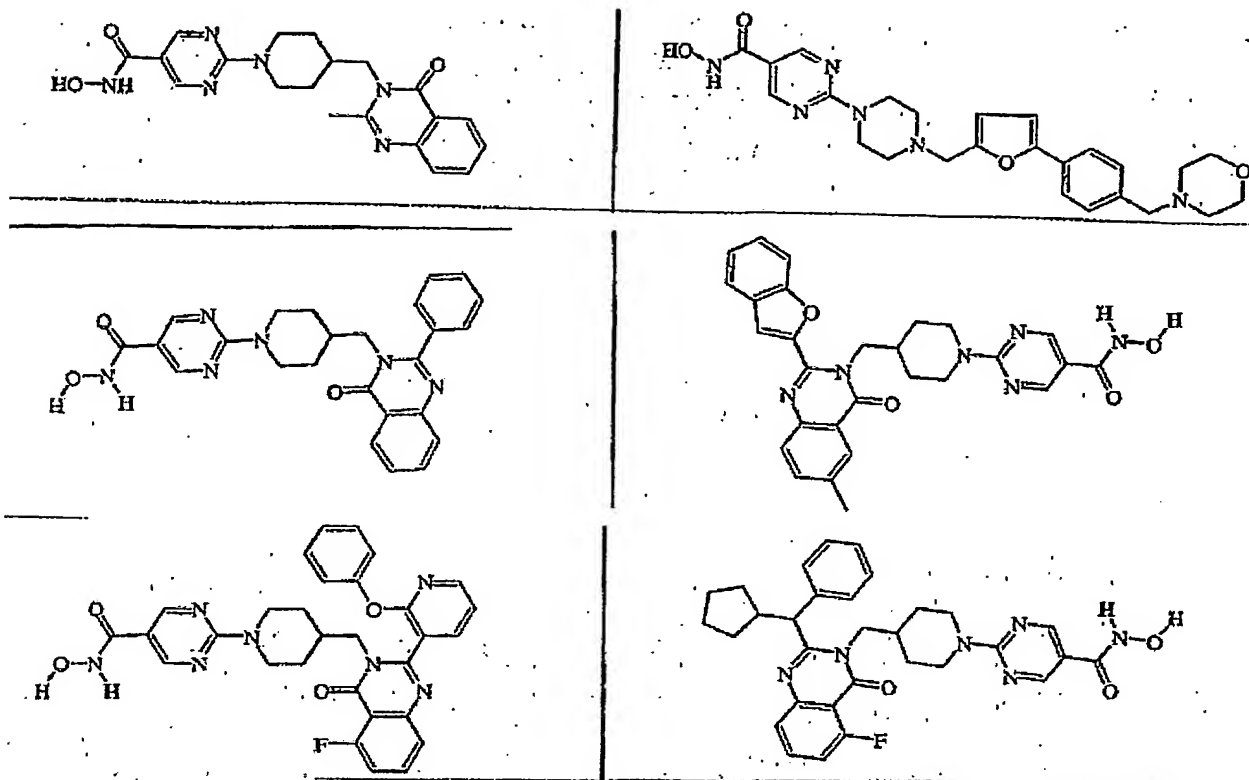
177. The compound of claim 172 that is selected from one of



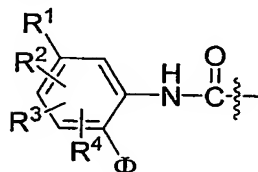








wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

178. The compound of claim 172 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

179. A compound according to claim 172 for use in inhibiting histone deacetylase.

180. A compound according to claim 172 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

181. The compound of claim 180, wherein said treatment is effected by inhibiting histone deacetylase.

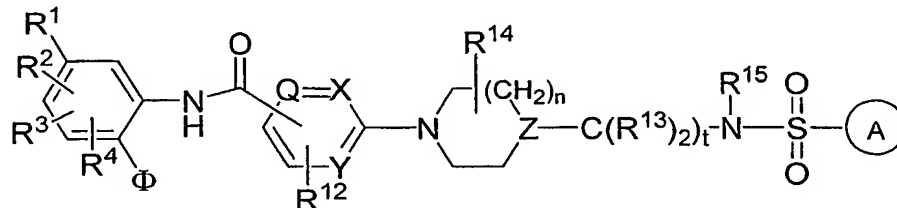
182. The compound of claim 180, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

183. The compound of claim 180, wherein said cell proliferative disease is cancer.

184. The compound of claim 183, wherein said cancer is a solid tumor cancer.

185. The compound of claim 183, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
186. A pharmaceutical composition comprising a compound according to claim 172 and a pharmaceutically acceptable carrier.
187. The pharmaceutical composition of claim 186 further comprising a nucleic acid level inhibitor of histone deacetylase.
188. The pharmaceutical composition of claim 187, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
189. The pharmaceutical composition of claim 188, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
190. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 172.
191. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 186.
192. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 187.
193. The method of claim 191, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
194. The method of claim 191, wherein said cell proliferative disease is cancer.
195. The method of claim 194, wherein said cancer is a solid tumor cancer.
196. The method of claim 195, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

197. The method of claim 192, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
198. The method of claim 192, wherein said cell proliferative disease is cancer.
199. The method of claim 198, wherein said cancer is a solid tumor cancer.
200. The method of claim 199, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
201. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is  $-\text{NH}_2$  or  $-\text{OH}$ ;

$\text{R}^1$  is H or as defined in claim 1;

$\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined in claim 1;

$n$  is 0, 1, 2 or 3 and when  $n$  is 0 then a direct bond is intended;

$t$  is 0, 1, 2, 3 or 4 and when  $t$  is 0 then a direct bond is intended;

Q is nitrogen or  $-\text{C}=\text{C}$ ,  $-\text{CR}$ , or  $-\text{CH}$ ;

X is nitrogen or  $-\text{C}=\text{C}$ ;

Y is nitrogen or  $-\text{C}=\text{C}$ ;

Z is nitrogen or  $-\text{CH}$ ;

R is selected from the group consisting of hydrogen, halogen,  $-\text{NH}_2$ , nitro, hydroxy, aryl, heterocyclyl,  $\text{C}_3\text{-C}_8\text{-cycloalkyl}$ , heteroaryl,  $\text{C}_1\text{-C}_7\text{-alkyl}$ , haloalkyl,  $\text{C}_1\text{-C}_7\text{-alkenyl}$ ,  $\text{C}_1\text{-C}_7\text{-alkynyl}$ ,  $\text{C}_1\text{-C}_7\text{-acyl}$ ,  $\text{C}_1\text{-C}_7\text{-alkyl-aryloxy}$ ,  $\text{C}_1\text{-C}_7\text{-alkyl-arylsulfanyl}$ ,  $\text{C}_1\text{-C}_7\text{-alkyl-arylsulfinyl}$ ,  $\text{C}_1\text{-C}_7\text{-alkyl-arylsulfonyl}$ ,  $\text{C}_1\text{-C}_7\text{-alkyl-}$



arylamino sulfonyl, C<sub>1</sub>-C<sub>7</sub>-alkyl-arylamine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkenyl-C(O)-amine, C<sub>1</sub>-C<sub>7</sub>-alkynyl-R<sup>9</sup>, C<sub>1</sub>-C<sub>7</sub>-alkenyl-R<sup>9</sup> wherein R<sup>9</sup> is hydrogen, hydroxy, amino, C<sub>1</sub>-C<sub>7</sub>-alkyl or C<sub>1</sub>-C<sub>7</sub>-alkoxy;

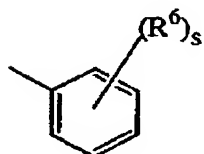
each R<sup>12</sup> is hydrogen, halo, hydroxy, amino, nitro, C<sub>1</sub>-6alkyl, C<sub>1</sub>-6alkyloxy, trifluoromethyl, di(C<sub>1</sub>-6alkyl)amino, hydroxyamino or naphthalenylsulfonylpyrazinyl;

each R<sup>13</sup> independently represents a hydrogen atom and one hydrogen atom can be replaced by a substituent selected from aryl;

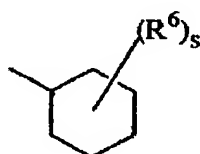
R<sup>14</sup> is hydrogen, hydroxy, amino, hydroxyc<sub>1</sub>-6alkyl, C<sub>1</sub>-6alkyl, C<sub>1</sub>-6alkyloxy, arylC<sub>1</sub>-6alkyl, aminocarbonyl, hydroxycarbonyl, aminoc<sub>1</sub>-6alkyl, aminocarbonylc<sub>1</sub>-6alkyl, hydroxycarbonylc<sub>1</sub>-6alkyl, hydroxyaminocarbonyl, C<sub>1</sub>-6alkyloxycarbonyl, C<sub>1</sub>-6alkylaminoC<sub>1</sub>-6alkyl or di(C<sub>1</sub>-6alkyl)aminoC<sub>1</sub>-6alkyl;

R<sup>15</sup> is hydrogen, C<sub>1</sub>-6alkyl, C<sub>3</sub>-10cycloalkyl, hydroxyc<sub>1</sub>-6alkyl, C<sub>1</sub>-6alkyloxyC<sub>1</sub>-6alkyl, di(C<sub>1</sub>-6alkyl)aminoC<sub>1</sub>-6alkyl or aryl;

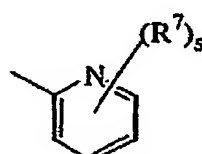
 is a radical selected from



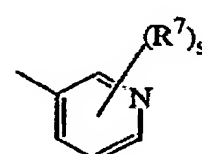
(a-1)



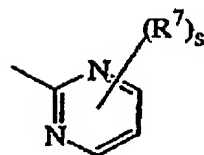
(a-2)



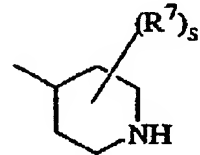
(a-3)



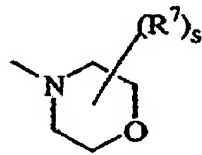
(a-4)



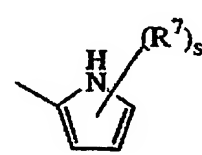
(a-5)



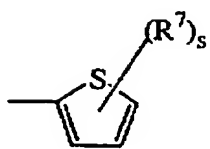
(a-6)



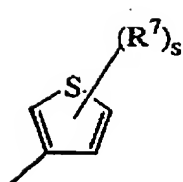
(a-7)



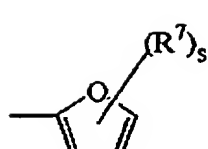
(a-8)



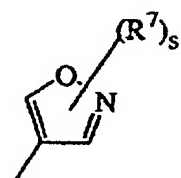
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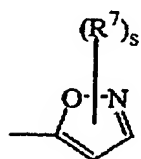
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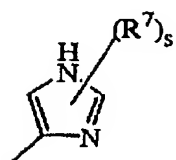
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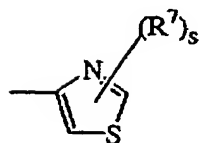
(a-12)



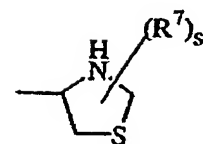
(a-13)



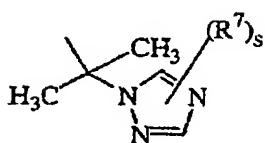
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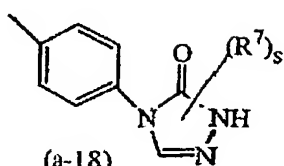
(a-15)



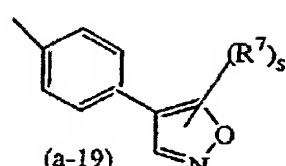
(a-16)



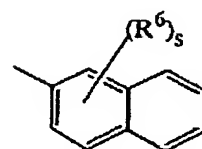
(a-17)



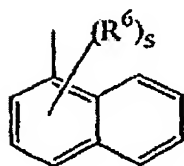
(a-18)



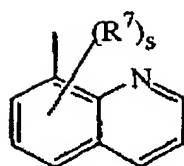
(a-19)



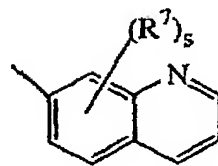
(a-20)



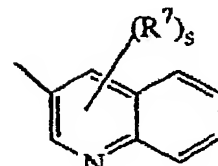
(a-21)



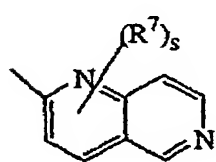
(a-22)



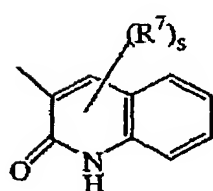
(a-23)



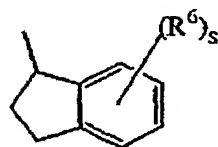
(a-24)



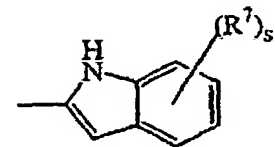
(a-25)



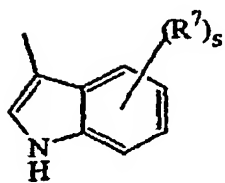
(a-26)



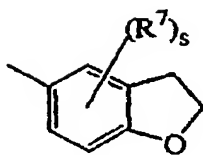
(a-27)



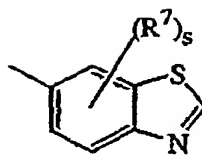
(a-28)



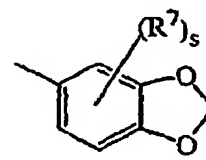
(a-29)



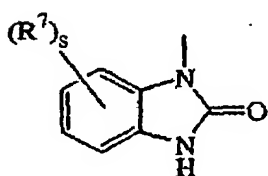
(a-30)



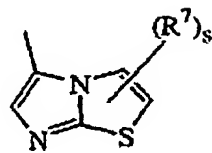
(a-31)



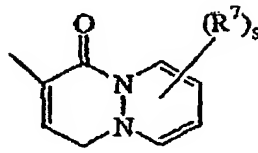
(a-32)



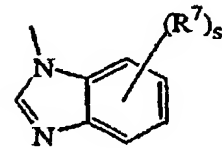
(a-33)



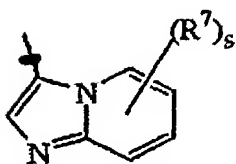
(a-34)



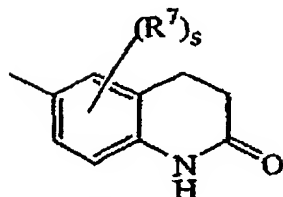
(a-35)



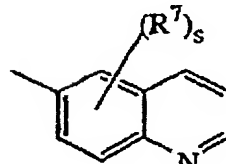
(a-36)



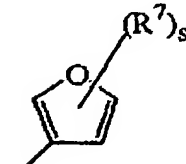
(a-37)



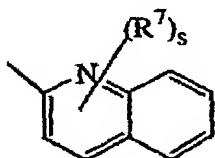
(a-38)



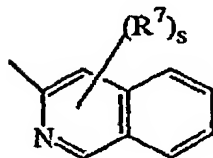
(a-39)



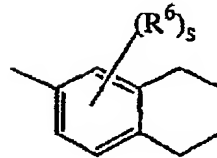
(a-40)



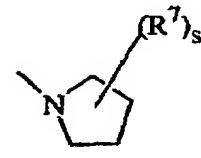
(a-41)



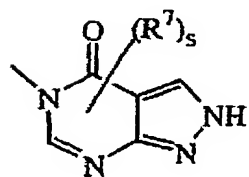
(a-42)



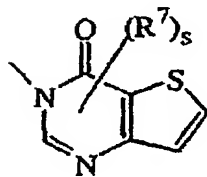
(a-43)



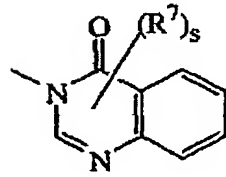
(a-44)



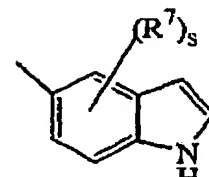
(a-45)



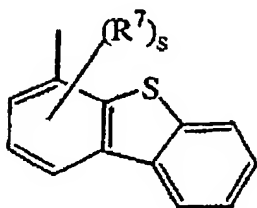
(a-46)



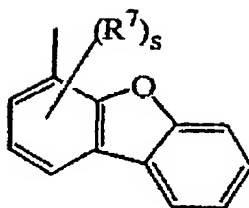
(a-47)



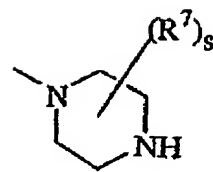
(a-48)



(a-49)



(a-50)



(a-51)

wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;  
 each  $R^6$  and  $R^7$  are independently selected from hydrogen; halo; hydroxy; amino; nitro;  
 trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and  
 C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl;  
 C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy;  
 di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino;  
 aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;  
 aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl;  
 thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,

hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl,  
C<sub>1-6</sub>alkyloxy piperidinyl, C<sub>1-6</sub>alkyloxy piperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl,  
hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl;  
oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl;  
pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl;  
morpholinylC<sub>1-6</sub>alkyloxy; morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino;  
morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl;  
C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl;  
naphtalenylsulfonylpiperazinyl; naphtalenylsulfonylpiperidinyl; naphtalenylsulfonyl;

C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indole; phenyl; phenyl substituted with one, two or three substituents  
 independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy,  
 hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy,  
 C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxy carbonyl,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,

di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano,  
 piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,  
 C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl,

(hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(hydroxyC<sub>1-4</sub>alkyl)amino, di(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, furanyl, furanyl  
 substituted with -CH=CH-CH=CH-, pyrrolidinylC<sub>1-4</sub>alkyl, pyrrolidinylC<sub>1-4</sub>alkyloxy,  
 morpholynyl, morpholynylC<sub>1-4</sub>alkyloxy, morpholynylC<sub>1-4</sub>alkyl,  
 morpholynylC<sub>1-4</sub>alkylamino, morpholynylC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, piperazinyl,  
 C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy, piperazinylC<sub>1-4</sub>alkyl,  
 C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylamino,  
 C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylaminoC<sub>1-6</sub>alkyl, tetrahydropyrimidinylpiperazinyl,  
 tetrahydropyrimidinylpiperazinylC<sub>1-4</sub>alkyl, piperidinylaminoC<sub>1-4</sub>alkylamino,  
 piperidinylaminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino,  
 (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 pyridinylC<sub>1-4</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkylamino, hydroxyC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino;

each R<sup>6</sup> and R<sup>7</sup> can be placed on the nitrogen in replacement of the hydrogen;

aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

202. The compound of claim 201 wherein each of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, and R<sup>15</sup>, respectively, in claim 201 wherein:

n is 0, 1 or 2;

t is 0, 1, 2 or 3;

Q is  $\text{—C}\equiv$  ,  $\text{—CR}\diagdown$  , or  $\text{—CH}\diagdown$  ;

R<sup>2</sup> is hydrogen, C<sub>1-6</sub>alkyl or naphthalenylsulfonylpyrazinyl;

each R<sup>3</sup> independently represents a hydrogen atom;

R<sup>4</sup> is hydrogen, hydroxy, hydroxyC<sub>1-6</sub>alkyl or C<sub>1-6</sub>alkyloxy;

R<sup>5</sup> is hydrogen, C<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkyl or C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyl;

$\text{—}\textcircled{\text{A}}$  is a radical selected from (a-1), (a-7) or (a-20);

each s is independently 0 or 1;

each R<sup>6</sup> is independently selected from hydrogen; thiophenyl; furanyl; benzofuranyl; phenyl; or phenyl substituted with one substituents independently selected from C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylsulfonyl or di(C<sub>1-4</sub>alkyl)amino; each R<sup>7</sup> is independently selected from hydrogen.

203. The compound of claim 201 wherein each of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, and R<sup>15</sup>, respectively, claim 201 wherein:

n is 1 or 2;

t is 0, 1, 2 or 3;

Q is  $\text{—C}\equiv$  ,  $\text{—CR}\diagdown$  , or  $\text{—CH}\diagdown$  ;

R<sup>2</sup> is hydrogen or C<sub>1-6</sub>alkyl;

each R<sup>3</sup> independently represents a hydrogen atom;

R<sup>4</sup> is hydrogen;

R<sup>5</sup> is hydrogen or C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyl;

$\text{—}\textcircled{\text{A}}$  is a radical selected from (a-1) or (a-20);

each s is independently 0 or 1;

each R<sup>6</sup> is independently selected from hydrogen; thiophenyl; furanyl; benzofuranyl; phenyl; or phenyl substituted with one substituents independently selected from C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl or di(C<sub>1-4</sub>alkyl)amino.

204. The compound of claim 201 wherein R<sup>12</sup> is H.




205. The compound of claim 201 wherein each of  $R^2$ ,  $R^3$ ,  $R^4$  and  $R^5$  corresponds to  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ , and  $R^{15}$ , respectively, in claim 201 wherein:

$t$  is 0;

$R^2$  is hydrogen, halo, hydroxy, amino, nitro,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl or  $di(C_{1-6}$ alkyl)amino;

$R^4$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, aryl $C_{1-6}$ alkyl, aminocarbonyl, amino $C_{1-6}$ alkyl,  $C_{1-6}$ alkylamino $C_{1-6}$ alkyl or  $di(C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

$R^5$  is hydrogen

— is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) or (a-51);

each  $s$  is independently 0, 1, 2, 3 or 4;


$R^6$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxy carbonyl;  $C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy;  $di(C_{1-6}$ alkyl)amino; cyano; thiophenyl; furanyl; furanyl substituted with hydroxy $C_{1-6}$ alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl;  $C_{1-6}$ alkylmorpholinyl; piperazinyl;  $C_{1-6}$ alkylpiperazinyl; hydroxy $C_{1-6}$ alkylpiperazinyl;  $C_{1-6}$ alkyloxypiperidinyl; pyrazolyl; pyrazolyl substituted with one or two substituents selected from  $C_{1-6}$ alkyl or trihalo $C_{1-6}$ alkyl; pyridinyl; pyridinyl substituted with  $C_{1-6}$ alkyloxy, aryloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl;

$R^7$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxy carbonyl;

C<sub>1-6</sub>alkylsulfonyl; hydroxyC<sub>1-6</sub>alkyl; aryloxy; di(C<sub>1-6</sub>alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy or trifluoromethyl.

206. The compound of claim 201 wherein each of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, and R<sup>15</sup>, respectively, in claim 201 wherein:

R<sup>5</sup> is hydrogen, C<sub>1-6</sub>alkyl, C<sub>3-10</sub>cycloalkyl, hydroxyC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyl or di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;

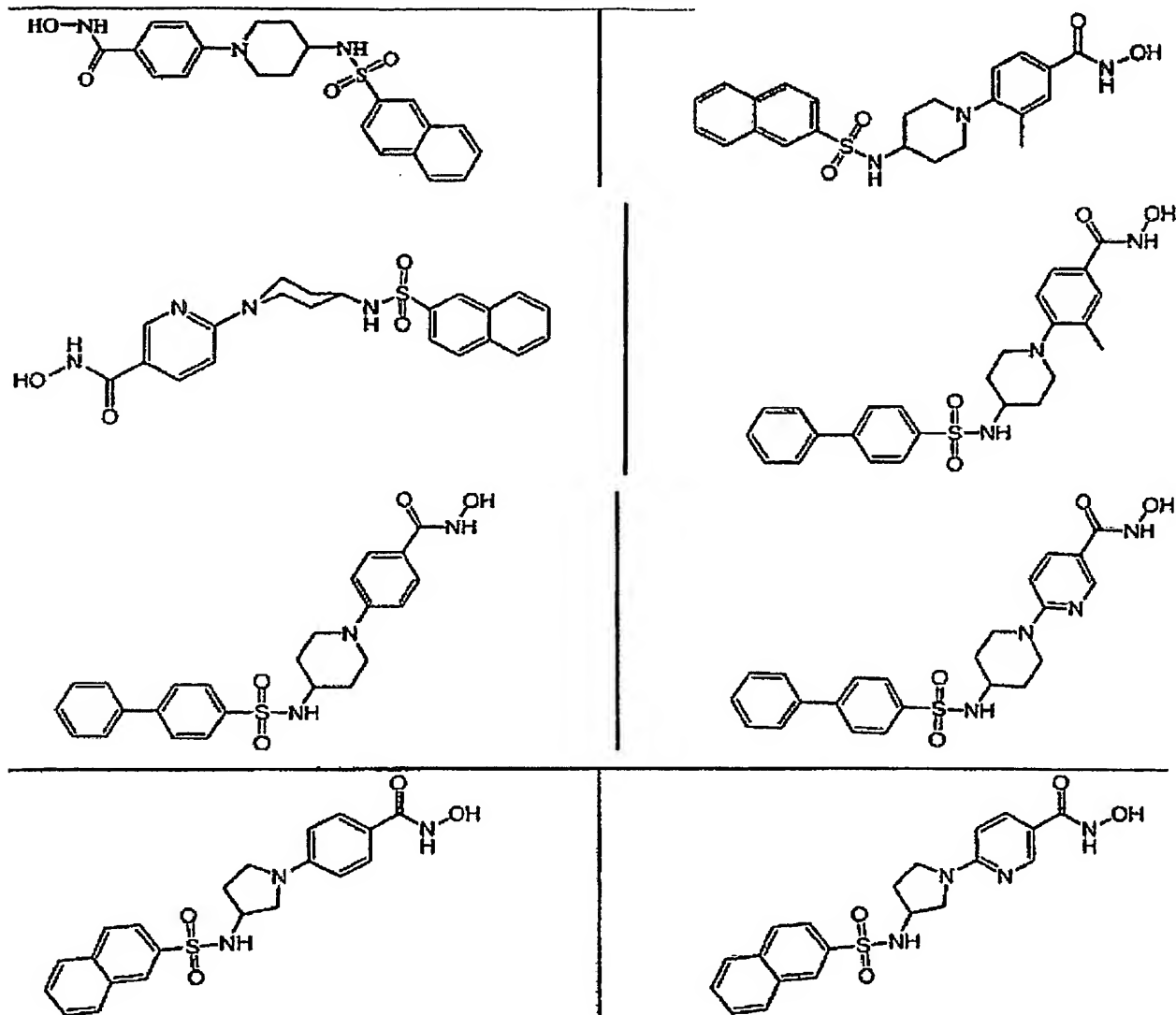
— is a radical selected from (a-1), (a-2), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8) (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-27), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42) (a-43) or (a-44);

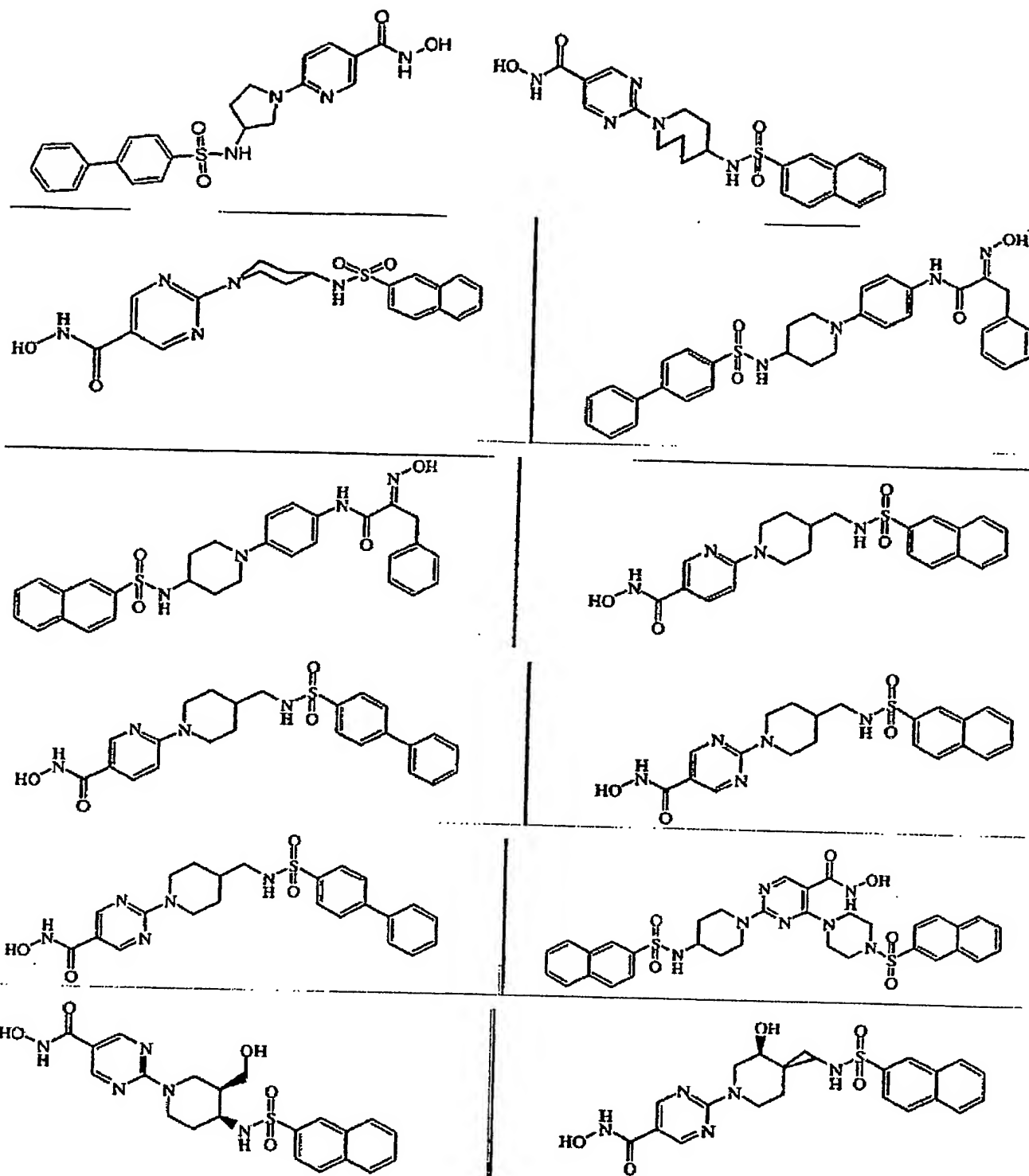
l) each R<sup>6</sup> and R<sup>7</sup> are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; arylC<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; arylsulfonyl; arylsulfonylamino; aryloxy; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; furanyl;

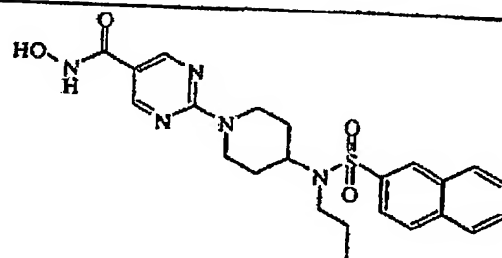
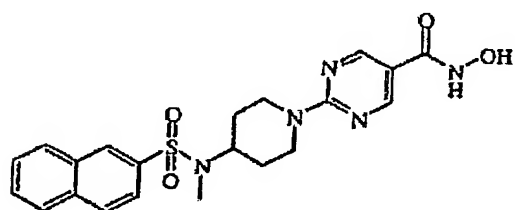
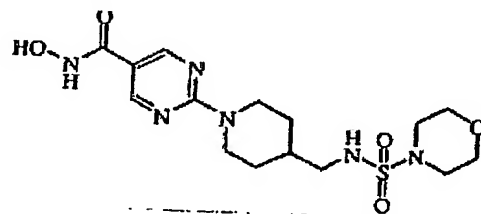
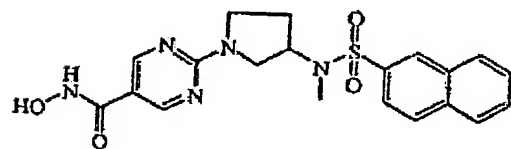
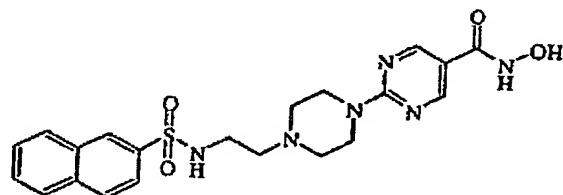
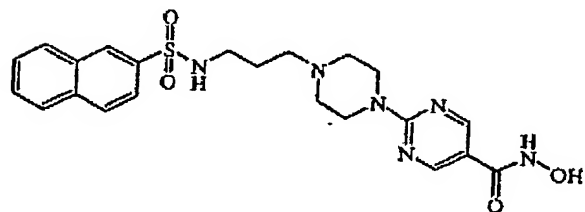
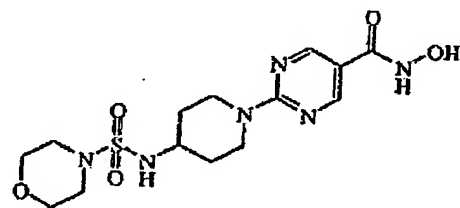
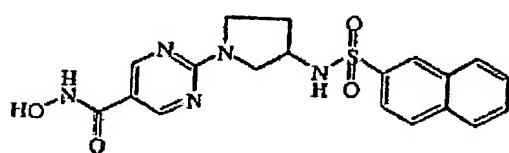
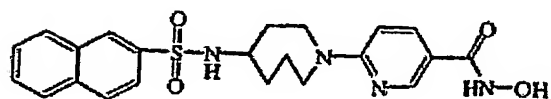
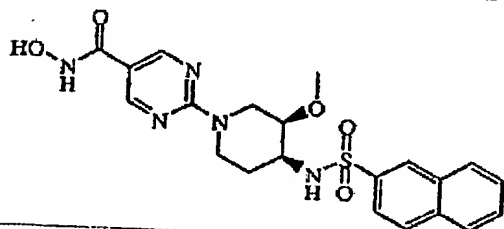
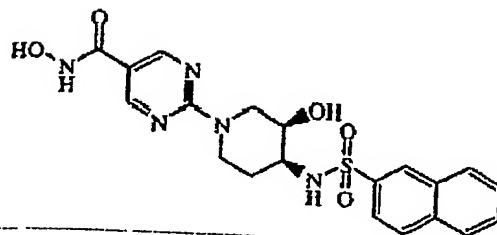
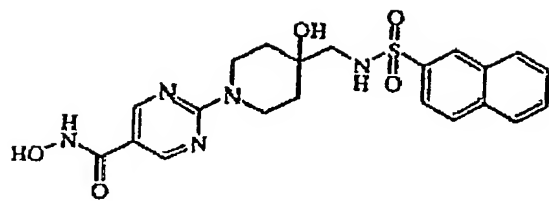
imidazolyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl; pyrrolidinyl; piperidinylC<sub>1-6</sub>alkyloxy;  
 morpholinyl; C<sub>1-6</sub>alkylmorpholinyl; morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl substituted with two  
 substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl; pyridinyl; pyridinyl  
 substituted with C<sub>1-6</sub>alkyloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; phenyl  
 substituted with one, two or three substituents independently selected from halo,  
 amino, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl,  
 trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,  
 C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl,  
 (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 pyrrolidinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl,  
 C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy,

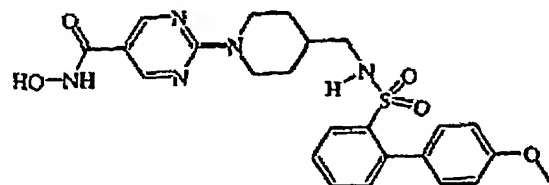
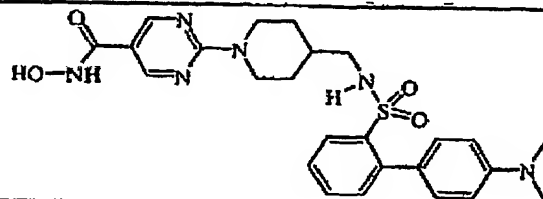
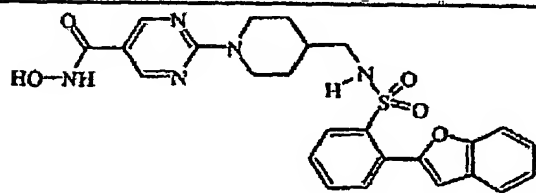
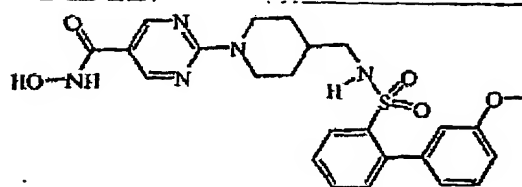
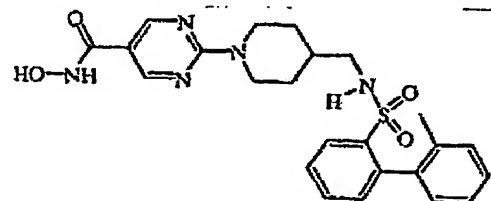
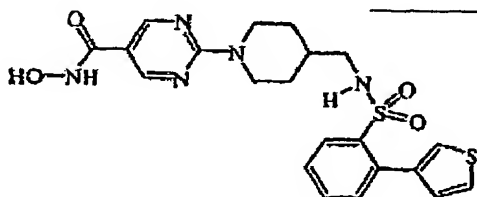
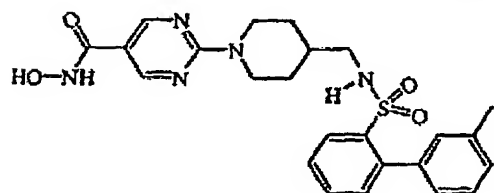
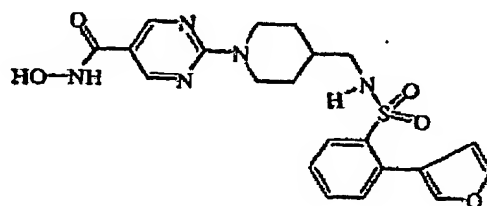
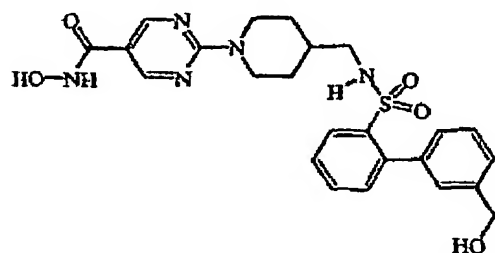
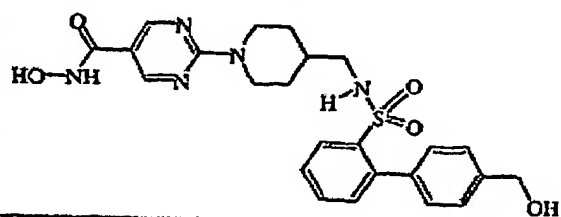
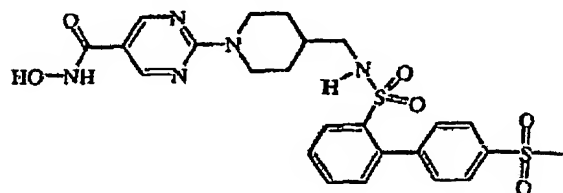
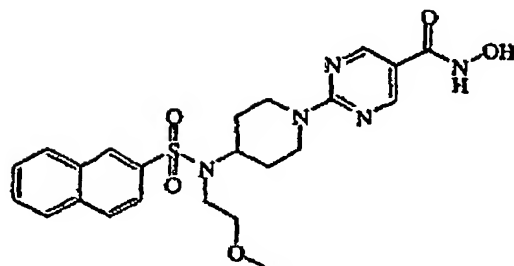
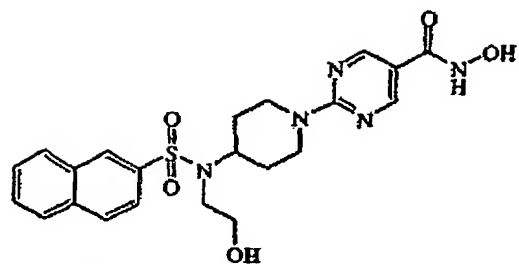
C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl,  
hydroxyC<sub>1-4</sub>alkylamino, di(hydroxyC<sub>1-4</sub>alkyl)amino,  
di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl,  
aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino.

207. The compound of claim 201 that is selected from one of

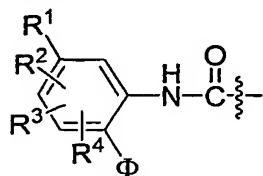








wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein Φ, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in accordance with claim 1.

208. A compound according to claim 201 for use in inhibiting histone deacetylase.

209. A compound according to claim 201 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

210. The compound of claim 209, wherein said treatment is effected by inhibiting histone deacetylase.

211. The compound of claim 209, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

212. The compound of claim 209, wherein said cell proliferative disease is cancer.

213. The compound of claim 212, wherein said cancer is a solid tumor cancer.

214. The compound of claim 212, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

215. A pharmaceutical composition comprising a compound according to claim 201 and a pharmaceutically acceptable carrier.

216. The pharmaceutical composition of claim 215 further comprising a nucleic acid level inhibitor of histone deacetylase.

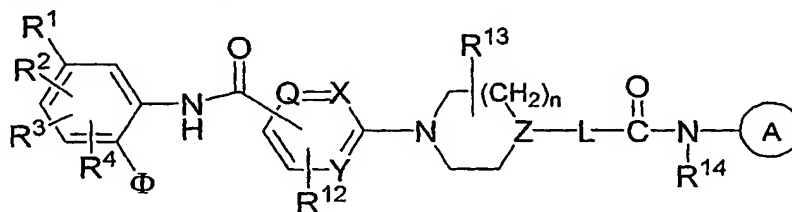
217. The pharmaceutical composition of claim 216, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

218. The pharmaceutical composition of claim 217, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

219. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 201.



220. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 215.
221. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 216.
222. The method of claim 220, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
223. The method of claim 220, wherein said cell proliferative disease is cancer.
224. The method of claim 223, wherein said cancer is a solid tumor cancer.
225. The method of claim 224, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
226. The method of claim 221, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
227. The method of claim 221, wherein said cell proliferative disease is cancer.
228. The method of claim 227, wherein said cancer is a solid tumor cancer.
229. The method of claim 228, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
230. The compound of claim 201 wherein  $R^2$ ,  $R^3$ , and  $R^4$  are all H.
231. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is  $-NH_2$  or  $-OH$ ;

$R^1$  is H or as defined in claim 1;

$R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1;

$n$  is 0, 1, 2 or 3 and when  $n$  is 0 then a direct bond is intended;

Q is nitrogen or  $\text{—C}\equiv$ ,  $\text{—CR}$ , or  $\text{—CH}$ ;

X is nitrogen or  $\text{—C}\equiv$ ;

Y is nitrogen or  $\text{—C}\equiv$ ;

Z is nitrogen or  $\text{—CH}$ ;

R is selected from the group consisting of hydrogen, halogen,  $\text{—NH}_2$ , nitro, hydroxy, aryl, heterocyclyl,  $\text{C}_3\text{—C}_8\text{—cycloalkyl}$ , heteroaryl,  $\text{C}_1\text{—C}_7\text{—alkyl}$ , haloalkyl,  $\text{C}_1\text{—C}_7\text{—alkenyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl}$ ,  $\text{C}_1\text{—C}_7\text{—acyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-aryloxy}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfanyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfinyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylamino-sulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylamine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-R}^9$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-R}^9$  wherein  $R^9$  is hydrogen, hydroxy, amino,  $\text{C}_1\text{—C}_7\text{—alkyl}$  or  $\text{C}_1\text{—C}_7\text{—alkoxy}$ ;

$R^{12}$  is hydrogen, halo, hydroxy, amino, nitro,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxy}$ , trifluoromethyl,  $\text{di(C}_{1-6}\text{alkyl)amino}$ , hydroxyamino or naphthalenylsulfonylpyrazinyl;

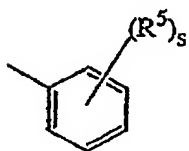
$R^{13}$  is hydrogen, hydroxy, amino, hydroxy $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxy}$ , aryl $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl, hydroxycarbonyl, amino $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxycarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxyaminocarbonyl,  $\text{C}_{1-6}\text{alkyloxycarbonyl}$ ,  $\text{C}_{1-6}\text{alkylaminoC}_{1-6}\text{alkyl}$  or  $\text{di(C}_{1-6}\text{alkyl)aminoC}_{1-6}\text{alkyl}$ ;

when Z is equal to nitrogen, then  $\text{—L—}$  is a direct bond;

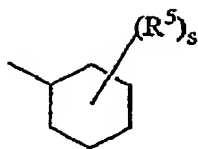
when Z is equal to  $\text{—CH—}$ , then  $\text{—L—}$  is  $\text{—NH—}$  or the bivalent radical  $\text{—C}_{1-6}\text{alkanediylNH—}$ ;

$R^{14}$  is hydrogen,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{3-10}\text{cycloalkyl}$ , hydroxy $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxyC}_{1-6}\text{alkyl}$ ,  $\text{di(C}_{1-6}\text{alkyl)aminoC}_{1-6}\text{alkyl}$  or aryl;

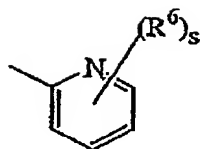
$\text{—}\textcircled{\text{A}}$  is a radical selected from



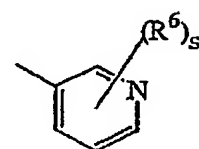
(a-1)



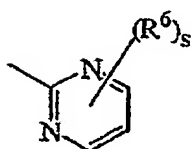
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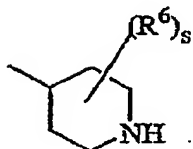
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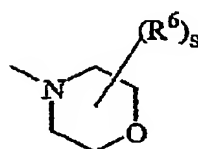
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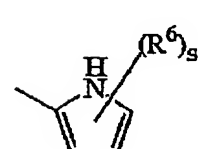
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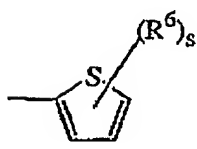
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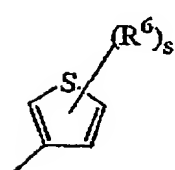
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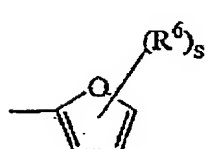
(a-8)



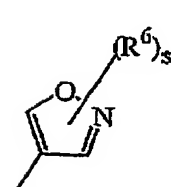
(a-9)



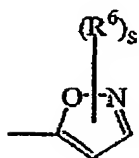
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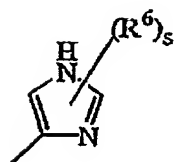
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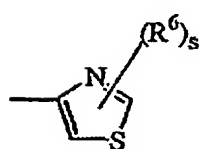
(a-12)



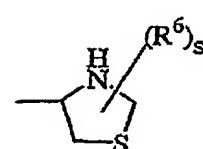
(a-13)



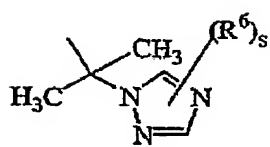
(a-14)



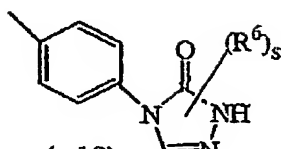
(a-15)



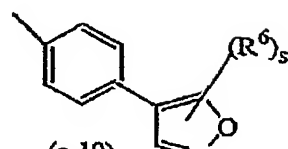
(a-16)



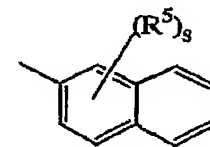
(a-17)



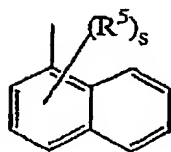
(a-18)



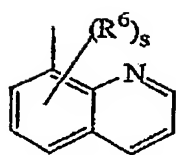
(a-19)



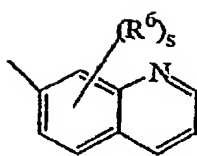
(a-20)



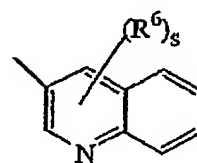
(a-21)



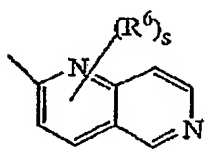
(a-22)



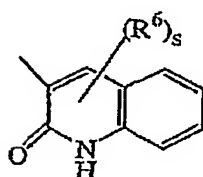
(a-23)



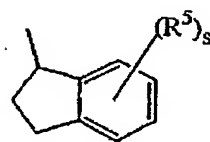
(a-24)



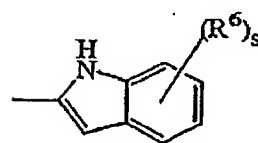
(a-25)



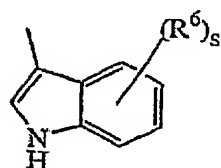
(a-26)



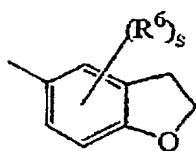
(a-27)



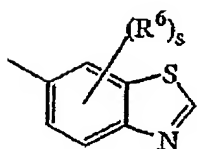
(a-28)



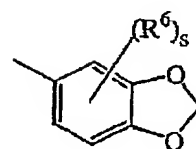
(a-29)



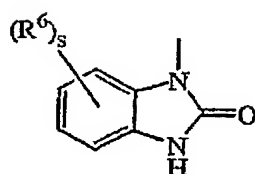
(a-30)



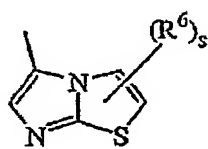
(a-31)



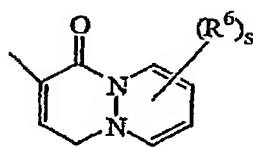
(a-32)



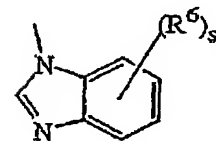
(a-33)



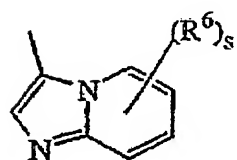
(a-34)



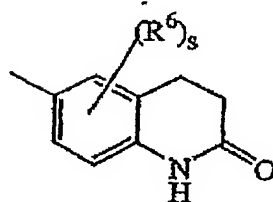
(a-35)



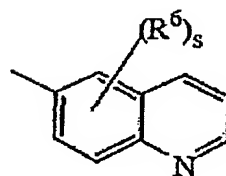
(a-36)



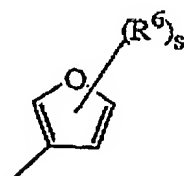
(a-37)



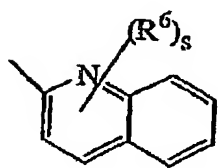
(a-38)



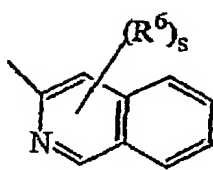
(a-39)



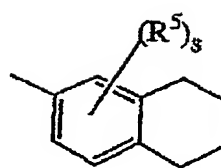
(a-40)



(a-41)



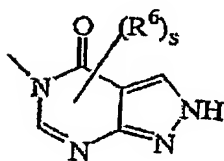
(a-42)



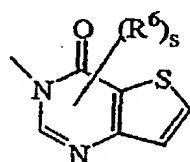
(a-43)



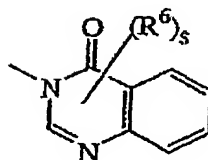
(a-44)



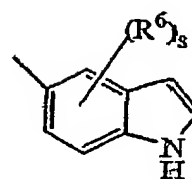
(a-45)



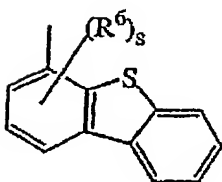
(a-46)



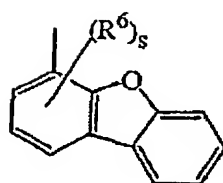
(a-47)



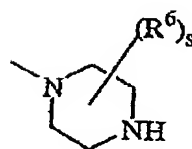
(a-48)



(a-49)



(a-50)



(a-51)

wherein each s is independently 0, 1, 2, 3, 4 or 5;

each R<sup>5</sup> and R<sup>6</sup> are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino; aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;

di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl;  
 thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl,  
 C<sub>1-6</sub>alkyloxypiperidinyl, C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl;  
 oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl;  
 pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl;  
 morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino;  
 morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl;

C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl;  
 naphtalenylsulfonylpiperazinyl; naphtalenylsulfonylpiperidinyl; naphtalenylsulfonyl  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indolyl; phenyl; phenyl substituted with one, two or three substituents  
 independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy,  
 hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy,

C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxycarbonyl, aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, aminosulfonylamino(C<sub>1-4</sub>alkyl)amino, aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano, piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,

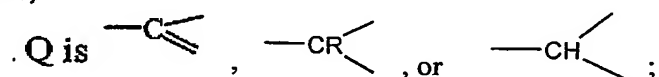


$C_{1-4}$ alkyloxypiperidinyl $C_{1-4}$ alkyl, hydroxy $C_{1-4}$ alkyloxy $C_{1-4}$ alkylpiperazinyl,  
 hydroxy $C_{1-4}$ alkyloxy $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyl,  
 (hydroxy $C_{1-4}$ alkyl)( $C_{1-4}$ alkyl)amino, (hydroxy $C_{1-4}$ alkyl)( $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyl,  
 di(hydroxy $C_{1-4}$ alkyl)amino, di(hydroxy $C_{1-4}$ alkyl)amino $C_{1-4}$ alkyl, furanyl, furanyl  
 substituted with  $-CH=CH-CH=CH-$ , pyrrolidinyl $C_{1-4}$ alkyl, pyrrolidinyl $C_{1-4}$ alkyloxy,  
 morpholinyl, morpholinyl $C_{1-4}$ alkyloxy, morpholinyl $C_{1-4}$ alkyl,  
 morpholinyl $C_{1-4}$ alkylamino, morpholinyl $C_{1-4}$ alkylamino $C_{1-4}$ alkyl, piperazinyl,  
 $C_{1-4}$ alkylpiperazinyl,  $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyloxy, piperazinyl $C_{1-4}$ alkyl,  
 $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkyl,  $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkylamino,  
 $C_{1-4}$ alkylpiperazinyl $C_{1-4}$ alkylamino $C_{1-6}$ alkyl, tetrahydropyrimidinylpiperazinyl,  
 tetrahydropyrimidinylpiperazinyl $C_{1-4}$ alkyl, piperidinylamino $C_{1-4}$ alkylamino,  
 piperidinylamino $C_{1-4}$ alkylamino $C_{1-4}$ alkyl,  
 ( $C_{1-4}$ alkylpiperidinyl)(hydroxy $C_{1-4}$ alkyl)amino $C_{1-4}$ alkylamino,  
 ( $C_{1-4}$ alkylpiperidinyl)(hydroxy $C_{1-4}$ alkyl)amino $C_{1-4}$ alkylamino $C_{1-4}$ alkyl,  
 pyridinyl $C_{1-4}$ alkyloxy,  
 hydroxy $C_{1-4}$ alkylamino, hydroxy $C_{1-4}$ alkylamino $C_{1-4}$ alkyl,  
 di( $C_{1-4}$ alkyl)amino $C_{1-4}$ alkylamino, aminothiadiazolyl,  
 aminosulfonylpiperazinyl $C_{1-4}$ alkyloxy, or thiophenyl $C_{1-4}$ alkylamino;  
 each  $R^5$  and  $R^6$  can be placed on the nitrogen in replacement of the hydrogen;

aryl in the above is phenyl, or phenyl substituted with one or more substituents each  
 independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl, cyano or  
 hydroxycarbonyl.

232. The compound of claim 231 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  
 $R^{14}$ , respectively, in claim 231 wherein:

n is 1;



$R^2$  is hydrogen or nitro;

$R^3$  is hydrogen;

when Z is equal to  $-\text{CH}-$ , then  $-L-$  is the bivalent radical  $-\text{C}_{1-6}\text{alkanediylNH}-$ ;

$R^4$  is hydrogen,  $\text{C}_{1-6}\text{alkyl}$  or aryl;

$-\text{A}$  is a radical selected from (a-1) or (a-21);

each s is independently 0, 1 or 2;

each  $R^5$  is independently selected from hydrogen; halo; trihalo $\text{C}_{1-6}\text{alkyl}$ ;

trihalo $\text{C}_{1-6}\text{alkyloxy}$ ;  $\text{C}_{1-6}\text{alkyl}$ ;  $\text{C}_{1-6}\text{alkyloxy}$ ;  $\text{C}_{1-6}\text{alkylcarbonyl}$ ; aryloxy; cyano or phenyl.

233. The compound of claim 231 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 231 wherein:

n is 1;

Q is  $-\text{C}-$ ,  $-\text{CR}-$ , or  $-\text{CH}-$ ;

each X is nitrogen;

each Y is nitrogen;

$R^2$  is hydrogen;

$R^3$  is hydrogen;

when Z is equal to  $-\text{CH}-$ , then  $-L-$  is the bivalent radical  $-\text{C}_{1-6}\text{alkanediylNH}-$ ;

$R^4$  is hydrogen,  $\text{C}_{1-6}\text{alkyl}$  or aryl;

$-\text{A}$  is the radical (a-1);

each s is independently 0 or 1;

each  $R^5$  is independently selected from hydrogen or phenyl.

234. The compound of claim 231 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 231 wherein:

each Z is N;

$R^2$  is hydrogen, halo, hydroxy, amino, nitro,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, trifluoromethyl or  $di(C_{1-6}alkyl)amino$ ;

$R^3$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, aryl $C_{1-6}$ alkyl, aminocarbonyl, amino $C_{1-6}$ alkyl,  $C_{1-6}$ alkylamino $C_{1-6}$ alkyl or  $di(C_{1-6}alkyl)aminoC_{1-6}alkyl$ ;

$R^4$  is hydrogen;

—**(A)** is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) or (a-51);

each  $s$  is independently 0, 1, 2, 3 or 4;

$R^5$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxycarbonyl;

$C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy;  $di(C_{1-6}alkyl)amino$ ; cyano;

thiophenyl; furanyl; furanyl substituted with hydroxy $C_{1-6}$ alkyl; benzofuranyl;

imidazolyl; oxazolyl; oxazolyl substituted with aryl and  $C_{1-6}$ alkyl;

$C_{1-6}$ alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl;

$C_{1-6}$ alkylmorpholinyl; piperazinyl;  $C_{1-6}$ alkylpiperazinyl;

hydroxy $C_{1-6}$ alkylpiperazinyl;  $C_{1-6}$ alkyloxypiperidinyl; pyrazolyl; pyrazolyl

substituted with one or two substituents selected from  $C_{1-6}$ alkyl or trihalo $C_{1-6}$ alkyl;

pyridinyl; pyridinyl substituted with  $C_{1-6}$ alkyloxy, aryloxy or aryl; pyrimidinyl;

quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents

independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl;

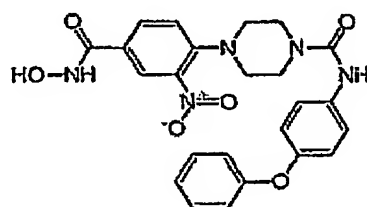
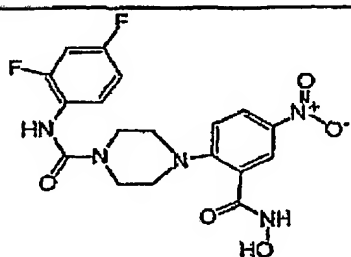
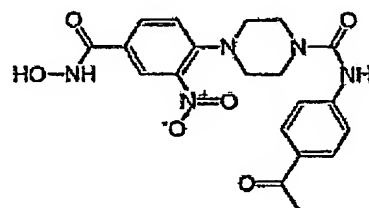
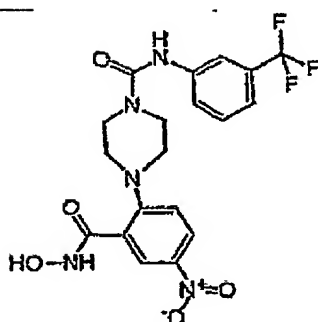
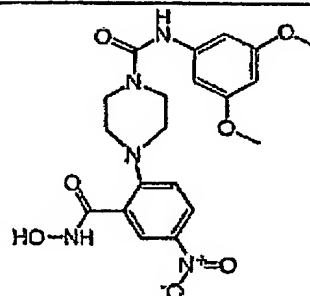
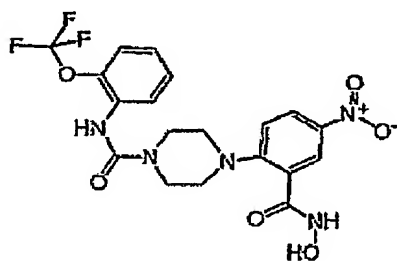
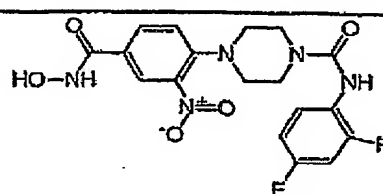
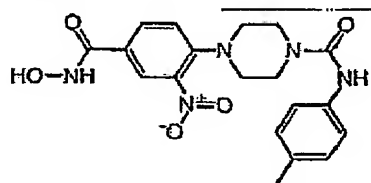
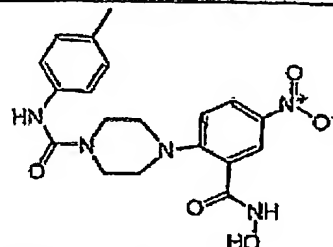
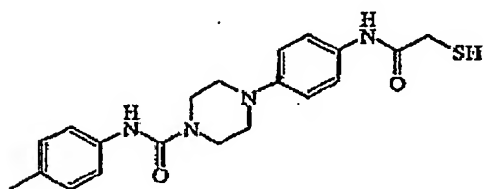
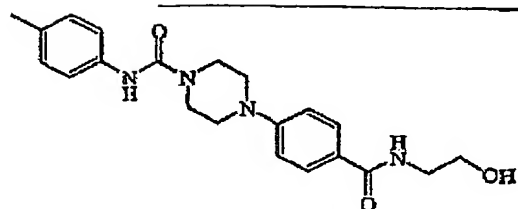
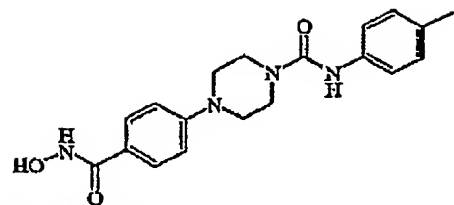
$R^6$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;

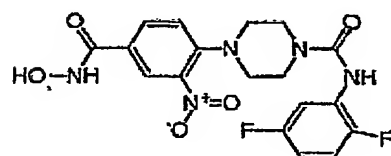
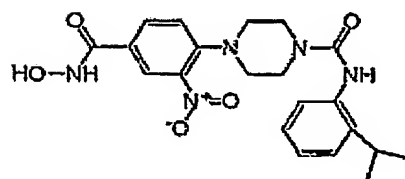
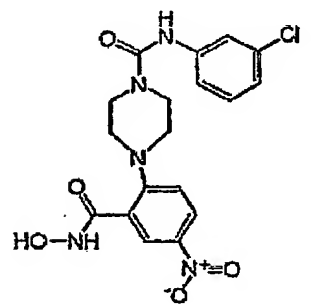
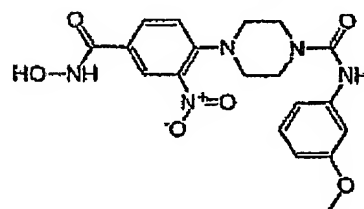
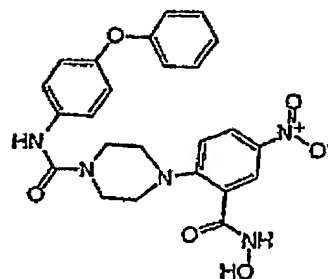
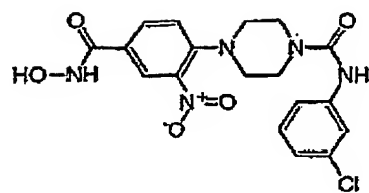
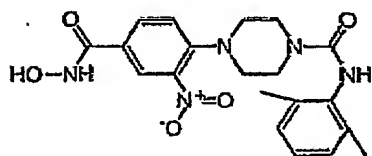
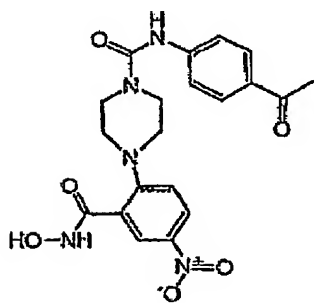
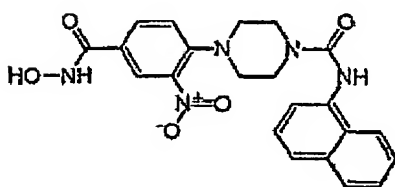
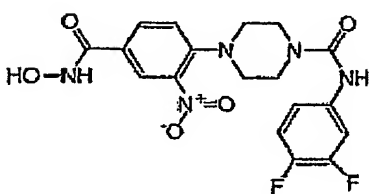
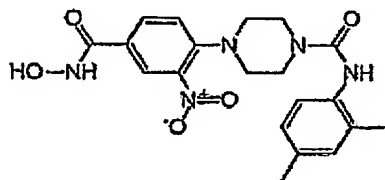
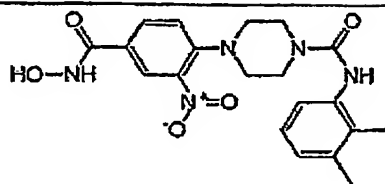
$C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxycarbonyl;

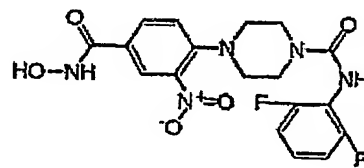
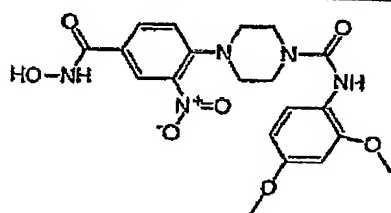
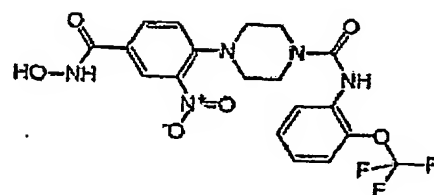
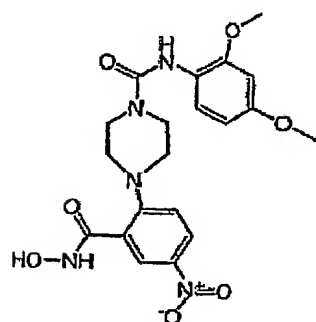
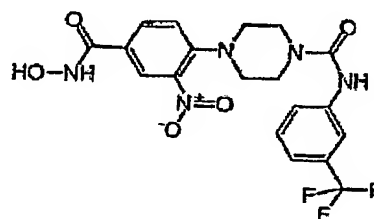
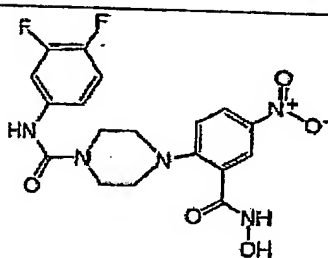
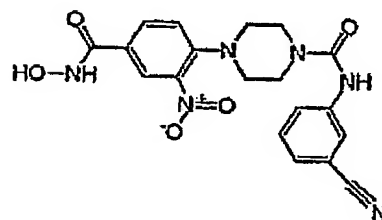
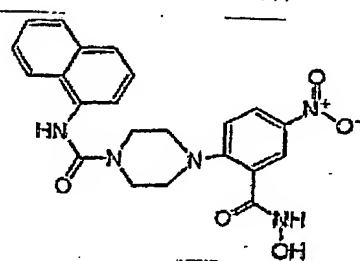
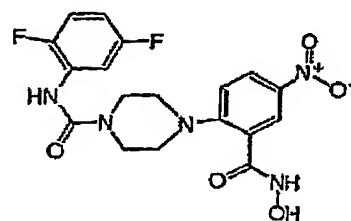
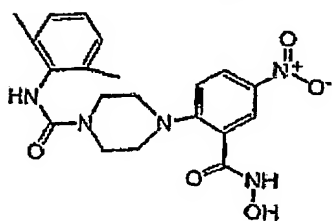
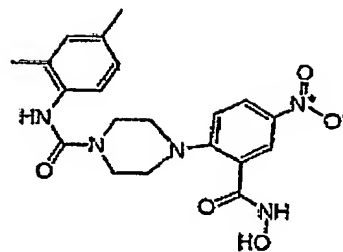
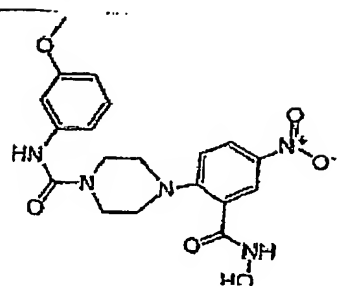
$C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy;  $di(C_{1-6}alkyl)amino$ ; cyano; pyridinyl;

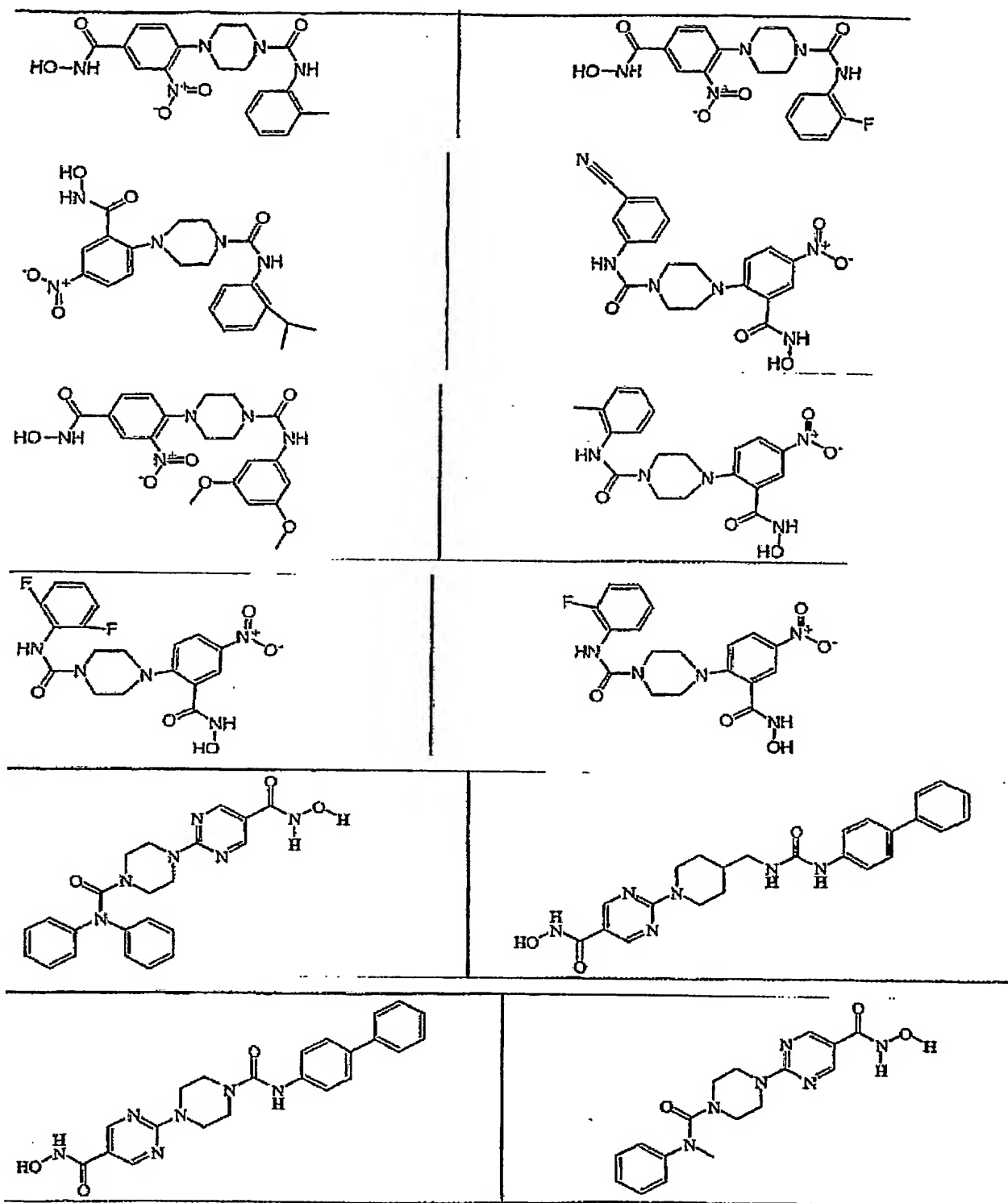
phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl.

235. The compound of claim 231 that is selected from one of

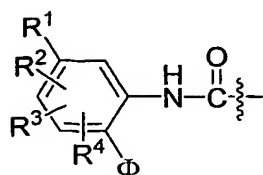








wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

236. The compound of claim 231 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

237. A compound according to claim 231 for use in inhibiting histone deacetylase.

238. A compound according to claim 231 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

239. The compound of claim 238, wherein said treatment is effected by inhibiting histone deacetylase.

240. The compound of claim 238, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

241. The compound of claim 238, wherein said cell proliferative disease is cancer.

242. The compound of claim 241, wherein said cancer is a solid tumor cancer.

243. The compound of claim 241, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

244. A pharmaceutical composition comprising a compound according to claim 231 and a pharmaceutically acceptable carrier.

245. The pharmaceutical composition of claim 244 further comprising a nucleic acid level inhibitor of histone deacetylase.

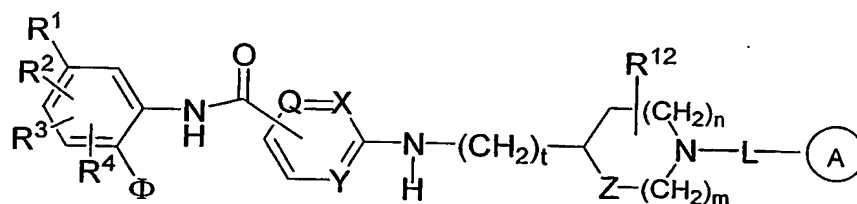
246. The pharmaceutical composition of claim 245, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

247. The pharmaceutical composition of claim 246, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

248. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 231.



249. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 244.
250. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 245.
251. The method of claim 249, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
252. The method of claim 249, wherein said cell proliferative disease is cancer.
253. The method of claim 252, wherein said cancer is a solid tumor cancer.
254. The method of claim 253, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
255. The method of claim 250, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
256. The method of claim 250, wherein said cell proliferative disease is cancer.
257. The method of claim 256, wherein said cancer is a solid tumor cancer.
258. The method of claim 257, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
259. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

R<sup>1</sup> is H or as defined in claim 1

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1;

n is 0, 1, 2 or 3 and when n is 0 then a direct bond is intended;

m is 0, 1, 2 or 3 and when m is 0 then a direct bond is intended;

t is 0 or 1 and when t is 0 then a direct bond is intended;

Q is nitrogen or  $\text{—C}\equiv$ ,  $\text{—CR}$ , or  $\text{—CH}$  ;

X is nitrogen or  $\text{—C}\equiv$  ;

Y is nitrogen or  $\text{—C}\equiv$  ;

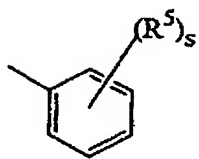
Z is  $\text{—CH}_2\text{—}$  or  $\text{—O—}$ ;

R is selected from the group consisting of hydrogen, halogen,  $\text{—NH}_2$ , nitro, hydroxy, aryl, heterocyclyl,  $\text{C}_3\text{—C}_8\text{-cycloalkyl}$ , heteroaryl,  $\text{C}_1\text{—C}_7\text{-alkyl}$ , haloalkyl,  $\text{C}_1\text{—C}_7\text{-alkenyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkynyl}$ ,  $\text{C}_1\text{—C}_7\text{-acyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-aryloxy}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-arylsulfanyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-arylsulfinyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-arylsulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-arylaminosulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{-alkyl-arylamine}$ ,  $\text{C}_1\text{—C}_7\text{-alkynyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{-alkenyl-C(O)-amine}$ ,  $\text{C}_1\text{—C}_7\text{-alkynyl-R}^9$ ,  $\text{C}_1\text{—C}_7\text{-alkenyl-R}^9$  wherein  $\text{R}^9$  is hydrogen, hydroxy, amino,  $\text{C}_1\text{—C}_7\text{-alkyl}$  or  $\text{C}_1\text{—C}_7\text{-alkoxy}$ ;

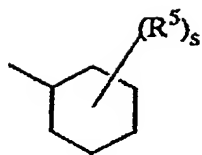
$\text{R}^{12}$  is hydrogen, hydroxy, amino, hydroxy $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxy}$ , aryl $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl, hydroxycarbonyl, amino $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxycarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxyaminocarbonyl,  $\text{C}_{1-6}\text{alkyloxycarbonyl}$ ,  $\text{C}_{1-6}\text{alkylaminoC}_{1-6}\text{alkyl}$  or di( $\text{C}_{1-6}\text{alkyl}$ )amino $\text{C}_{1-6}\text{alkyl}$ ;

$\text{—L—}$  is a bivalent radical selected from  $\text{C}_{1-6}\text{alkanediyl}$ , carbonyl, sulfonyl, or  $\text{C}_{1-6}\text{alkanediyl}$  substituted with phenyl;

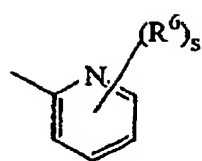
$\text{—}\textcircled{\text{A}}$  is a radical selected from



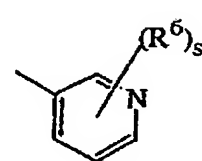
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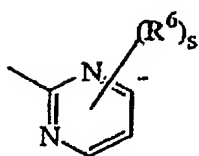
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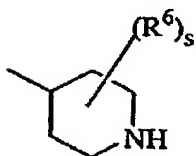
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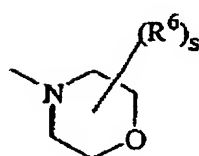
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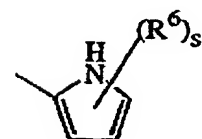
(a-5)



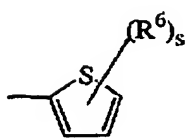
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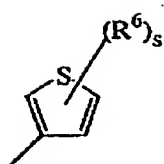
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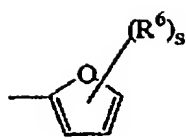
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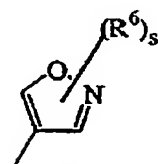
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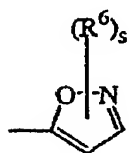
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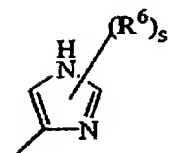
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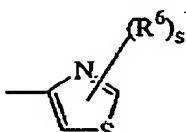
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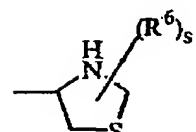
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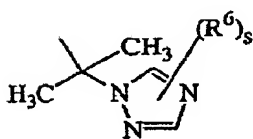
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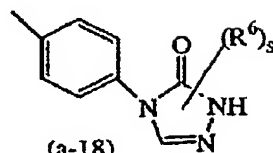
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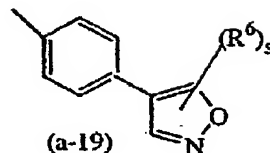
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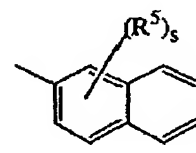
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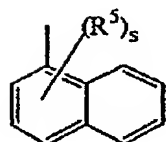
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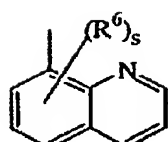
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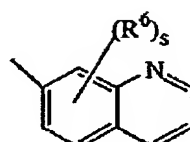
(a-20)



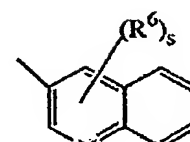
(a-21)



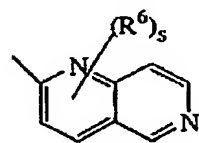
(a-22)



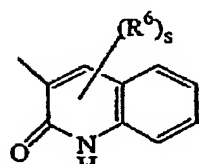
(a-23)



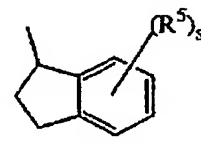
(a-24)



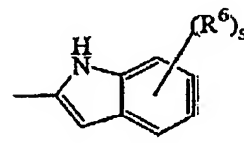
(a-25)



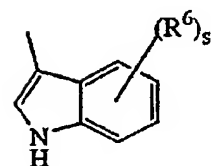
(a-26)



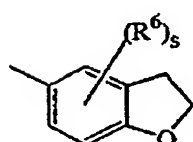
(a-27)



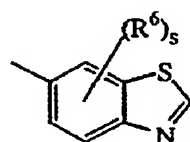
(a-28)



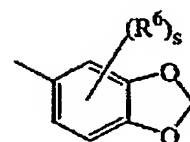
(a-29)



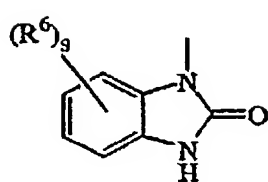
(a-30)



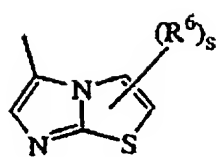
(a-31)



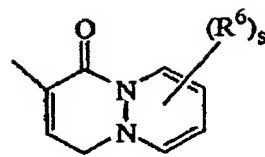
(a-32)



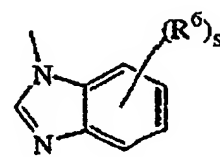
(a-33)



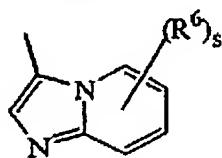
(a-34)



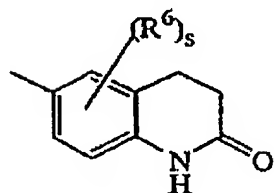
(a-35)



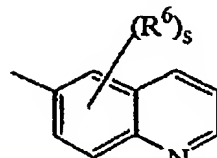
(a-36)



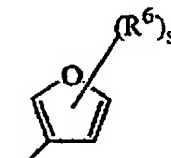
(a-37)



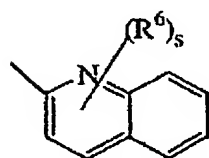
(a-38)



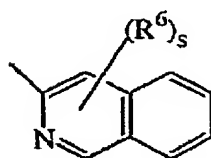
(a-39)



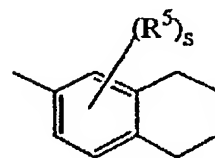
(a-40)



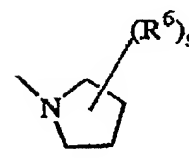
(a-41)



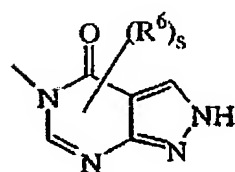
(a-42)



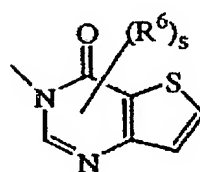
(a-43)



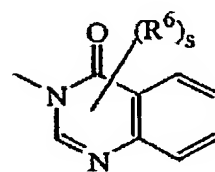
(a-44)



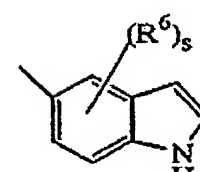
(a-45)



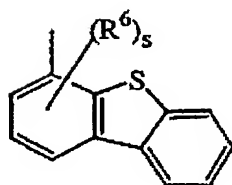
(a-46)



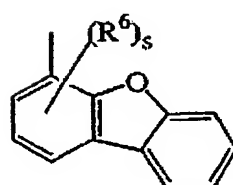
(a-47)



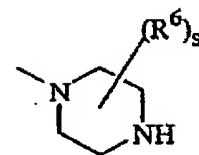
(a-48)



(a-49)



(a-50)



(a-51)

wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;

each  $R^5$  and  $R^6$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl;

hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy;  
 di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino;  
 aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino;  
  
 di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;  
 aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl;  
 thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl,  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl,  
 C<sub>1-6</sub>alkyloxy piperidinyl, C<sub>1-6</sub>alkyloxy piperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl,  
 hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl;  
 oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl;  
 pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl;  
 morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino;  
 morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl;  
  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl;  
 naphthalenylsulfonylpiperazinyl; naphthalenylsulfonylpiperidinyl; naphthalenylsulfonyl;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino;

C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indolyl; phenyl; phenyl substituted with one, two or three substituents  
 independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy,  
 hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy,  
 C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxycarbonyl,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,

di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano, piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl, C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(hydroxyC<sub>1-4</sub>alkyl)amino, di(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, furanyl, furanyl substituted with -CH=CH-CH=CH-, pyrrolidinylC<sub>1-4</sub>alkyl, pyrrolidinylC<sub>1-4</sub>alkyloxy, morpholinyl, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl, morpholinylC<sub>1-4</sub>alkylamino, morpholinylC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, piperazinyl, C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy, piperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylamino, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylaminoC<sub>1-6</sub>alkyl, tetrahydropyrimidinylpiperazinyl, tetrahydropyrimidinylpiperazinylC<sub>1-4</sub>alkyl, piperidinylaminoC<sub>1-4</sub>alkylamino, piperidinylaminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, pyridinylC<sub>1-4</sub>alkyloxy,

hydroxyC<sub>1-4</sub>alkylamino, hydroxyC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino; each R<sup>5</sup> and R<sup>6</sup> can be placed on the nitrogen in replacement of the hydrogen;

aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

260. The compound of claim 259 wherein each of R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup>, respectively, in claim 259 wherein:



n is 0, 1 or 2;

m is 0, 1 or 2;

each Q is  $\text{—C}\equiv$ ;

each X is nitrogen;

R<sup>2</sup> is hydrogen;

-L- is a bivalent radical selected from carbonyl, sulfonyl, or C<sub>1-6</sub>alkanediyl substituted with phenyl;

— $\bigcirc$ (A) is a radical selected from (a-1), (a-20) or (a-43);

each s is independently 0 or 1;

each R<sup>5</sup> is independently selected from hydrogen or phenyl.

261. The compound of claim 259 wherein each of R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup>, respectively, in claim 259 wherein:

n is 0, 1 or 2;

m is 1 or 2;

Q is  $\text{—C}\equiv$ ;

X is nitrogen;

R<sup>2</sup> is hydrogen;

-L- is a bivalent radical selected from carbonyl or sulfonyl;

— $\bigcirc$ (A) is a radical selected from (a-1) or (a-20);

each s is independently 0 or 1;


each R<sup>5</sup> is independently selected from hydrogen or aryl.

262. The compound of claim 259 wherein each of R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup>, respectively, in claim 259 wherein:

t is 0;

$R^2$  is hydrogen, hydroxy, amino, hydroxy $C_{1-6}$ alkyl,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy, aryl $C_{1-6}$ alkyl, aminocarbonyl, amino $C_{1-6}$ alkyl,  $C_{1-6}$ alkylamino $C_{1-6}$ alkyl or di( $C_{1-6}$ alkyl)amino $C_{1-6}$ alkyl;

-L- is a bivalent radical selected from  $C_{1-6}$ alkanediyl, carbonyl or sulfonyl;

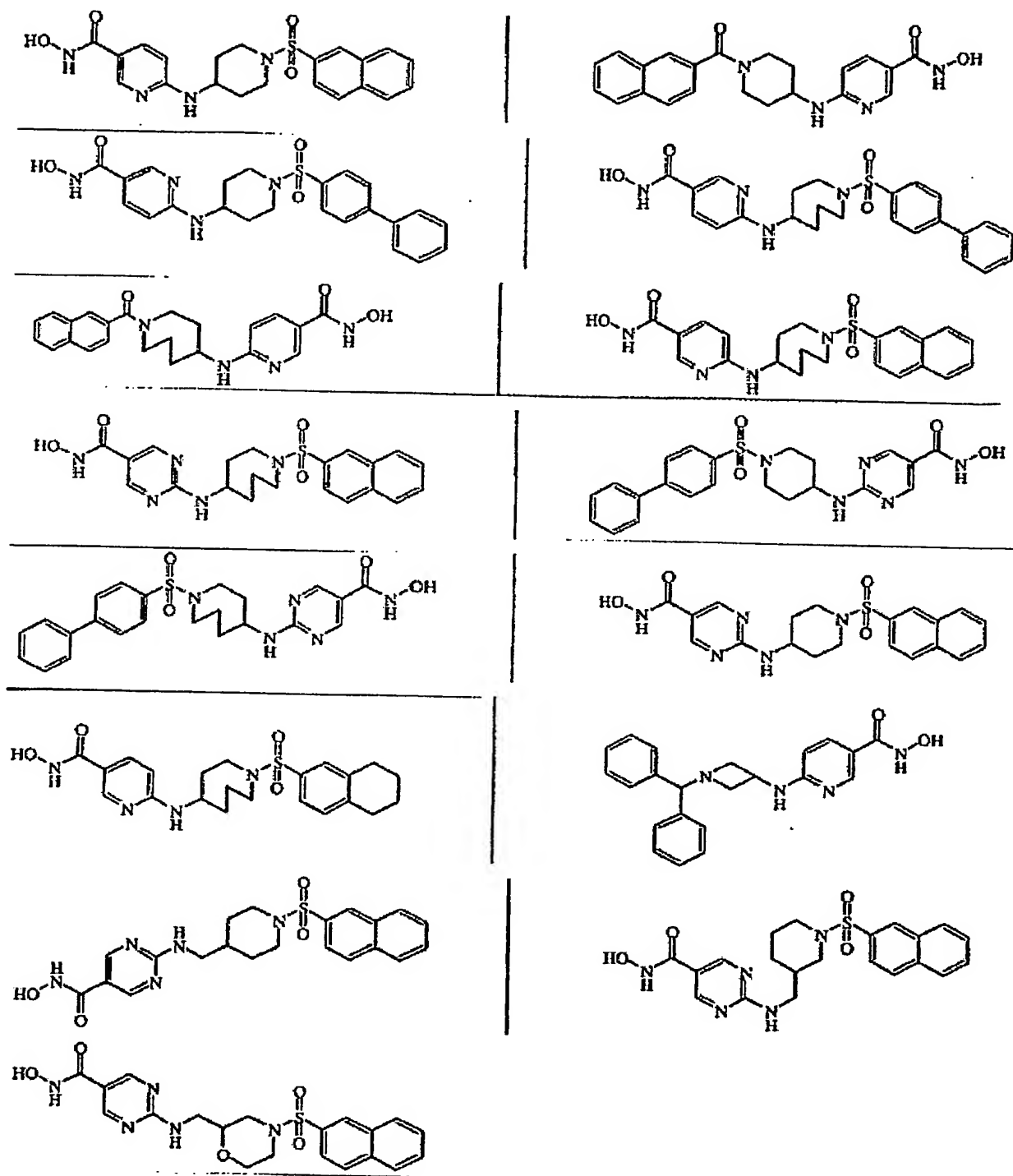
— is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) or (a-51);

each s is independently 0, 1, 2, 3 or 4;

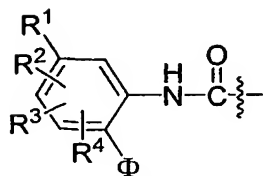
$R^5$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxy carbonyl;  $C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy; di( $C_{1-6}$ alkyl)amino; cyano; thiophenyl; furanyl; furanyl substituted with hydroxy $C_{1-6}$ alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl;

$C_{1-6}$ alkylmorpholinyl; piperazinyl;  $C_{1-6}$ alkylpiperazinyl; hydroxy $C_{1-6}$ alkylpiperazinyl;  $C_{1-6}$ alkyloxypiperidinyl; pyrazolyl; pyrazolyl substituted with one or two substituents selected from  $C_{1-6}$ alkyl or trihalo $C_{1-6}$ alkyl; pyridinyl; pyridinyl substituted with  $C_{1-6}$ alkyloxy, aryloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl;  $R^6$  is hydrogen; halo; hydroxy; amino; nitro; trihalo $C_{1-6}$ alkyl; trihalo $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkyl;  $C_{1-6}$ alkyloxy;  $C_{1-6}$ alkylcarbonyl;  $C_{1-6}$ alkyloxy carbonyl;  $C_{1-6}$ alkylsulfonyl; hydroxy $C_{1-6}$ alkyl; aryloxy; di( $C_{1-6}$ alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkyloxy or trifluoromethyl.

263. The compound of claim 259 that is selected from one of



wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1:

264. The compound of claim 259  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

265. A compound according to claim 259 for use in inhibiting histone deacetylase.

266. A compound according to claim 259 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

267. The compound of claim 266, wherein said treatment is effected by inhibiting histone deacetylase.

268. The compound of claim 266, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

269. The compound of claim 266, wherein said cell proliferative disease is cancer.

270. The compound of claim 269, wherein said cancer is a solid tumor cancer.

271. The compound of claim 269, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

272. A pharmaceutical composition comprising a compound according to claim 259 and a pharmaceutically acceptable carrier.

273. The pharmaceutical composition of claim 272 further comprising a nucleic acid level inhibitor of histone deacetylase.

274. The pharmaceutical composition of claim 273, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

275. The pharmaceutical composition of claim 274, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

276. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 259.

277. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 272.

278. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 273.

279. The method of claim 277, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

280. The method of claim 277, wherein said cell proliferative disease is cancer.

281. The method of claim 280, wherein said cancer is a solid tumor cancer.

282. The method of claim 281, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

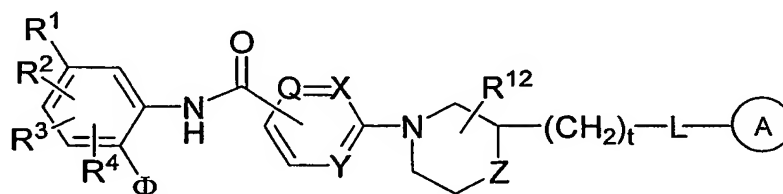
283. The method of claim 278, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

284. The method of claim 278, wherein said cell proliferative disease is cancer.

285. The method of claim 284, wherein said cancer is a solid tumor cancer.

286. The method of claim 285, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

287. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

R<sup>1</sup> is H or as defined in claim 1;

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1;

t is 0, 1, 2, 3 or 4 and when t is 0 then a direct bond is intended;

Q is nitrogen or  $\text{—C}\equiv$ ,  $\text{—CR}\diagup$ , or  $\text{—CH}\diagup$  ;

X is nitrogen or  $\text{—C}\equiv$  ;

Y is nitrogen or  $\text{—C}\equiv$  ;

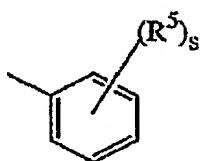
Z is  $\text{—NH—}$ ,  $\text{—O—}$  or  $\text{—CH}_2\text{—}$ ;

R is selected from the group consisting of hydrogen, halogen,  $\text{—NH}_2$ , nitro, hydroxy, aryl, heterocyclyl,  $\text{C}_3\text{—C}_8\text{—cycloalkyl}$ , heteroaryl,  $\text{C}_1\text{—C}_7\text{—alkyl}$ , haloalkyl,  $\text{C}_1\text{—C}_7\text{—alkenyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl}$ ,  $\text{C}_1\text{—C}_7\text{—acyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-aryloxy}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfanyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfinyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylsulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylaminosulfonyl}$ ,  $\text{C}_1\text{—C}_7\text{—alkyl-arylamine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-C(O)—amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-C(O)—amine}$ ,  $\text{C}_1\text{—C}_7\text{—alkynyl-R}^9$ ,  $\text{C}_1\text{—C}_7\text{—alkenyl-R}^9$  wherein  $\text{R}^9$  is hydrogen, hydroxy, amino,  $\text{C}_1\text{—C}_7\text{—alkyl}$  or  $\text{C}_1\text{—C}_7\text{—alkoxy}$ ;

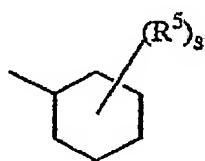
$\text{R}^{12}$  is hydrogen, hydroxy, amino, hydroxy $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxy}$ , aryl $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl, hydroxycarbonyl, amino $\text{C}_{1-6}\text{alkyl}$ , aminocarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxycarbonyl $\text{C}_{1-6}\text{alkyl}$ , hydroxyaminocarbonyl,  $\text{C}_{1-6}\text{alkyloxycarbonyl}$ ,  $\text{C}_{1-6}\text{alkylaminoC}_{1-6}\text{alkyl}$  or di( $\text{C}_{1-6}\text{alkyl}$ )amino $\text{C}_{1-6}\text{alkyl}$ ;

$\text{—L—}$  is a bivalent radical selected from  $\text{—NR}^9\text{C(O)—}$ ,  $\text{—NR}^9\text{SO}_2\text{—}$  or  $\text{—NR}^9\text{CH}_2\text{—}$  wherein  $\text{R}^9$  is hydrogen,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{3-10}\text{cycloalkyl}$ , hydroxy $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{1-6}\text{alkyloxyC}_{1-6}\text{alkyl}$  or di( $\text{C}_{1-6}\text{alkyl}$ )amino $\text{C}_{1-6}\text{alkyl}$ ;

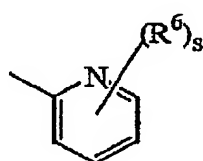
$\text{—}\textcircled{\text{A}}$  is a radical selected from



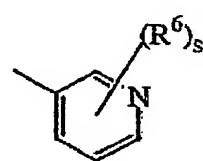
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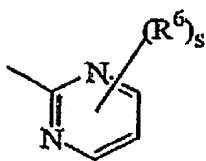
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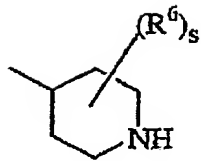
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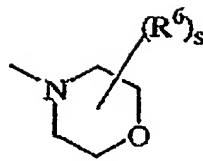
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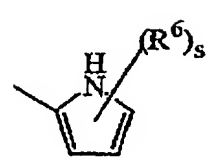
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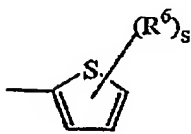
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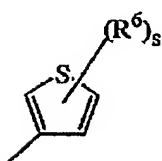
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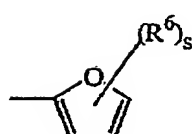
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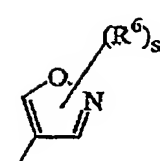
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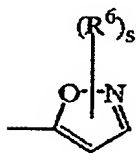
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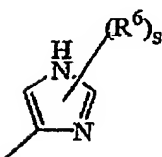
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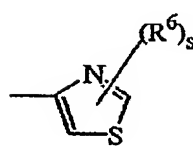
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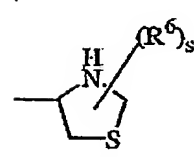
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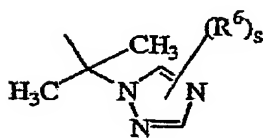
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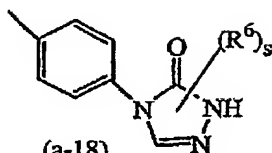
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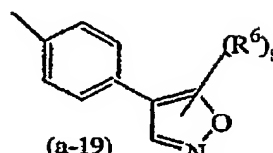
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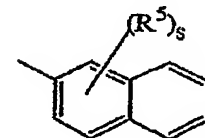
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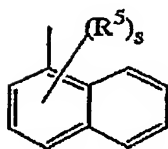
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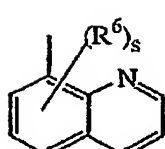
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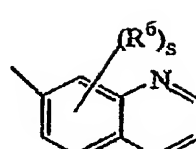
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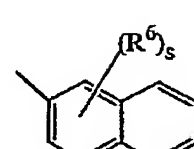
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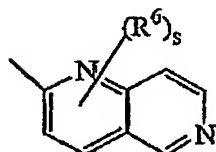
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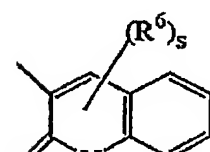
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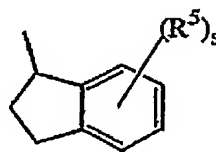
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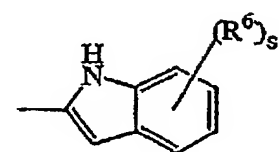
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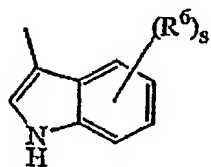
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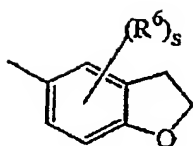
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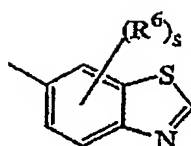
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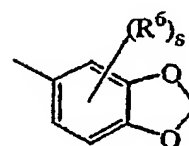
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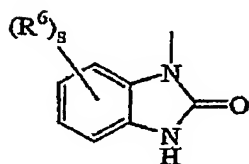
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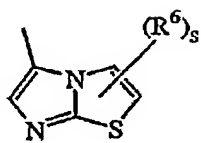
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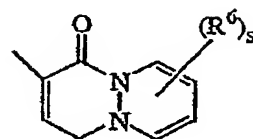
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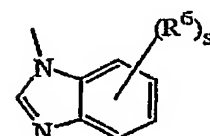
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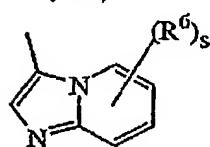
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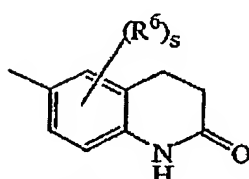
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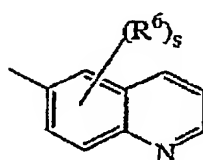
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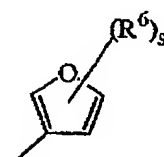
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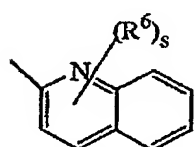
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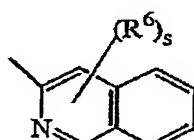
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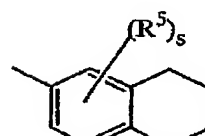
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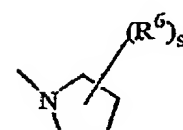
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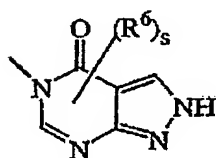
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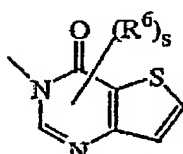
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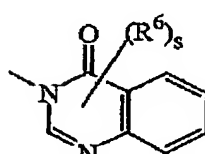
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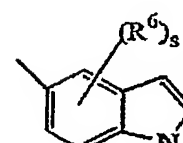
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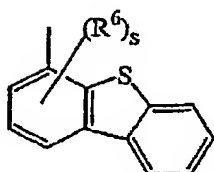
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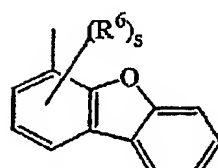
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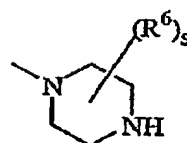
(a-48)



(a-49)



(a-50)



(a-51)

wherein each  $s$  is independently 0, 1, 2, 3, 4 or 5;

each  $R^5$  and  $R^6$  are independently selected from hydrogen; halo; hydroxy; amino; nitro;



trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyl substituted with aryl and C<sub>3-10</sub>cycloalkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino; aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino; (aryl)(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; arylsulfonyl; arylsulfonylamino; aryloxy; aryloxyC<sub>1-6</sub>alkyl; arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)amino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminosulfonylamino(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; cyano; thiophenyl; thiophenyl substituted with di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl, di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxypiperidinyl, C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl, morpholinylC<sub>1-6</sub>alkyl, hydroxyC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; piperidinylC<sub>1-6</sub>alkyloxy; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl; morpholinylC<sub>1-6</sub>alkyloxy; morpholinylC<sub>1-6</sub>alkyl; morpholinylC<sub>1-6</sub>alkylamino; morpholinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy; piperazinylC<sub>1-6</sub>alkyl; naphthalenylsulfonylpiperazinyl; naphthalenylsulfonylpiperidinyl; naphthalenylsulfonyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylamino; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl; aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl; aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;

di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; piperidinylaminoC<sub>1-6</sub>alkylamino;  
 piperidinylaminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino;  
 (C<sub>1-6</sub>alkylpiperidinyl)(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkylaminoC<sub>1-6</sub>alkyl; di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyl; pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl  
 substituted with two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl;  
 pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl;  
 tetrahydropyrimidinylpiperazinyl; tetrahydropyrimidinylpiperazinylC<sub>1-6</sub>alkyl;  
 quinolinyl; indole; phenyl; phenyl substituted with one, two or three substituents  
 independently selected from halo, amino, nitro, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy,  
 hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl, trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy,  
 C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxycarbonyl,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminocarbonyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)amino, di(C<sub>1-4</sub>alkyl)amino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylamino(C<sub>1-4</sub>alkyl)aminoC<sub>1-6</sub>alkyl, cyano,  
 piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,  
 C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl,  
 (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 di(hydroxyC<sub>1-4</sub>alkyl)amino, di(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, furanyl, furanyl  
 substituted with -CH=CH-CH=CH-, pyrrolidinylC<sub>1-4</sub>alkyl, pyrrolidinylC<sub>1-4</sub>alkyloxy,  
 morpholinyl, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl,

morpholinylC<sub>1-4</sub>alkylamino, morpholinylC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, piperazinyl, C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy, piperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylamino, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkylaminoC<sub>1-6</sub>alkyl, tetrahydropyrimidinylpiperazinyl, tetrahydropyrimidinylpiperazinylC<sub>1-4</sub>alkyl, piperidinylaminoC<sub>1-4</sub>alkylamino, piperidinylaminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, (C<sub>1-4</sub>alkylpiperidinyl)(hydroxyC<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, pyridinylC<sub>1-4</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkylamino, hydroxyC<sub>1-4</sub>alkylaminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl, aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino; each R<sup>5</sup> and R<sup>6</sup> can be placed on the nitrogen in replacement of the hydrogen; aryl in the above is phenyl, or phenyl substituted with one or more substituents each independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, trifluoromethyl, cyano or hydroxycarbonyl.

288. The compound of claim 287 wherein each of R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup>, respectively, in claim 287 wherein:

t is 0 or 1;

Q is  $\text{—C}\begin{smallmatrix} \diagup \\ \diagdown \end{smallmatrix}$ ,  $\text{—CR}\begin{smallmatrix} \diagup \\ \diagdown \end{smallmatrix}$ , or  $\text{—CH}\begin{smallmatrix} \diagup \\ \diagdown \end{smallmatrix}$ ;

X is nitrogen;

R<sup>12</sup> is hydrogen, hydroxy, C<sub>1-6</sub>alkyl, or arylC<sub>1-6</sub>alkyl;

-L- is a bivalent radical selected from -NHC(O)- or -NHSO<sub>2</sub>-;

$\text{—}\textcircled{\text{A}}$  is a radical selected from (a-1) or (a-20);

each s is independently 0 or 1;

each R<sup>5</sup> is independently selected from hydrogen or phenyl.

289. The compound of claim 287 wherein each of R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> corresponds to R<sup>12</sup>, R<sup>13</sup>, and R<sup>14</sup>, respectively, in claim 287 wherein:

t is 1;

Q is  $\text{—C}\equiv$  ; ,  $\text{—CR}$  , or  $\text{—CH}$  ;

X is nitrogen;

Y is nitrogen;

Z is  $\text{—O—}$  or  $\text{—CH}_2\text{—}$ ;

$R^{12}$  is H;

$\text{—L—}$  is a bivalent radical selected from  $\text{—NHC(O)—}$  or  $\text{—NHSO}_2\text{—}$ ;

$\text{—}\textcircled{\text{A}}$  is a radical selected from (a-1) or (a-20);

each s is independently 0 or 1;

each  $R^5$  is independently selected from hydrogen or phenyl.

290. The compound of claim 287 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 287 wherein:

t is 0;

$R^{12}$  is hydrogen, hydroxy, amino, hydroxy $\text{C}_{1-6}$ alkyl,  $\text{C}_{1-6}$ alkyl,  $\text{C}_{1-6}$ alkyloxy, aryl $\text{C}_{1-6}$ alkyl, aminocarbonyl, amino $\text{C}_{1-6}$ alkyl,  $\text{C}_{1-6}$ alkylamino $\text{C}_{1-6}$ alkyl or di( $\text{C}_{1-6}$ alkyl)amino $\text{C}_{1-6}$ alkyl;

$\text{—L—}$  is a bivalent radical selected from  $\text{—NHC(O)—}$  or  $\text{—NHSO}_2\text{—}$ ;

$\text{—}\textcircled{\text{A}}$  is a radical selected from (a-1), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42), (a-44), (a-45), (a-46), (a-47), (a-48) or (a-51);

each s is independently 0, 1, 2, 3 or 4;

$R^5$  is hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; hydroxyC<sub>1-6</sub>alkyl; aryloxy; di(C<sub>1-6</sub>alkyl)amino; cyano; thiophenyl; furanyl; furanyl substituted with hydroxyC<sub>1-6</sub>alkyl; benzofuranyl; imidazolyl; oxazolyl; oxazolyl substituted with aryl and C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl; pyrrolidinyl; pyrrolyl; morpholinyl; C<sub>1-6</sub>alkylmorpholinyl; piperazinyl; C<sub>1-6</sub>alkylpiperazinyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl; C<sub>1-6</sub>alkyloxypiperidinyl; pyrazolyl; pyrazolyl substituted with one or two substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl; pyridinyl; pyridinyl substituted with C<sub>1-6</sub>alkyloxy, aryloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy or trifluoromethyl;

$R^6$  is hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkyloxycarbonyl; C<sub>1-6</sub>alkylsulfonyl; hydroxyC<sub>1-6</sub>alkyl; aryloxy; di(C<sub>1-6</sub>alkyl)amino; cyano; pyridinyl; phenyl; or phenyl substituted with one or two substituents independently selected from halo, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy or trifluoromethyl.

291. The compound of claim 287 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 287 wherein:

$R^3$  and  $R^4$  are each independently selected from hydrogen, hydroxy, hydroxyC<sub>1-6</sub>alkyl, aminoC<sub>1-6</sub>alkyl or aminoaryl;

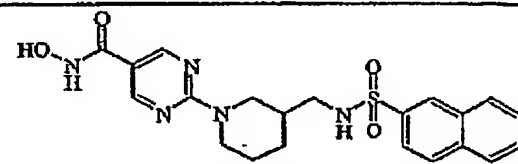
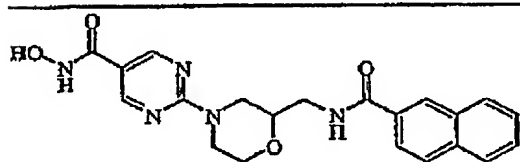
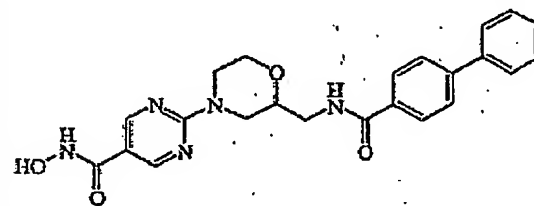
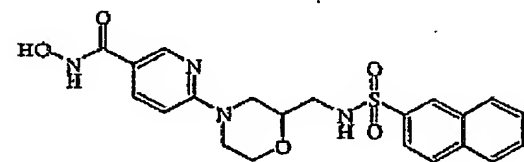
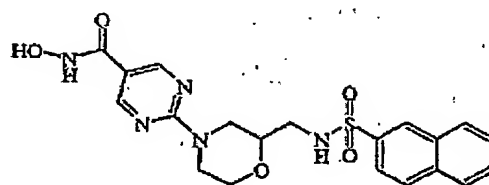
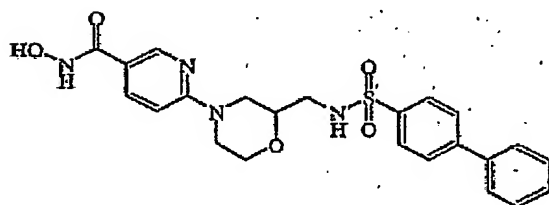
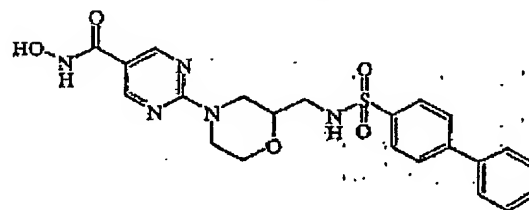
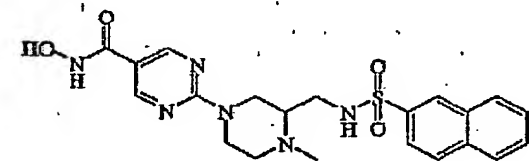
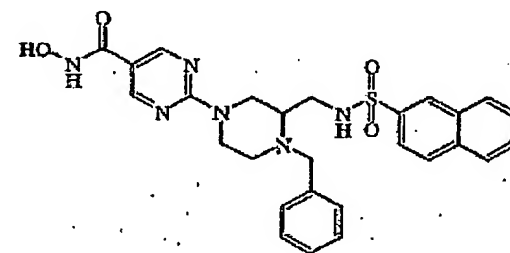
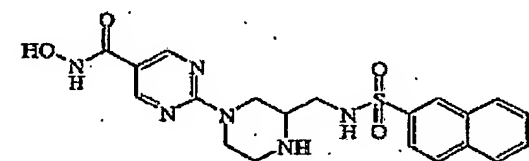
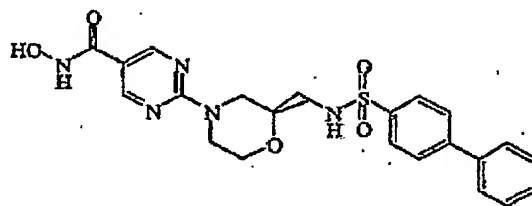
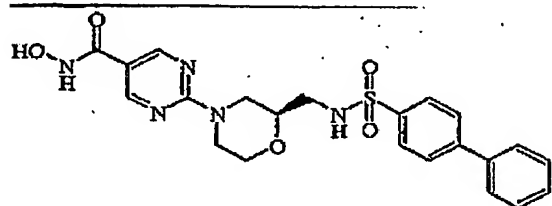
—(A) is a radical selected from (a-1), (a-2), (a-3), (a-4), (a-5), (a-6), (a-7), (a-8), (a-9), (a-10), (a-11), (a-12), (a-13), (a-14), (a-15), (a-16), (a-17), (a-18), (a-19), (a-20), (a-21), (a-22), (a-23), (a-24), (a-25), (a-26), (a-27), (a-28), (a-29), (a-30), (a-31), (a-32), (a-33), (a-34), (a-35), (a-36), (a-37), (a-38), (a-39), (a-40), (a-41), (a-42) (a-43) or (a-44);

each  $R^5$  and  $R^6$  are independently selected from hydrogen; halo; hydroxy; amino; nitro; trihaloC<sub>1-6</sub>alkyl; trihaloC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxy;

C<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkyloxy; C<sub>1-6</sub>alkylcarbonyl; C<sub>1-6</sub>alkylsulfonyl; cyanoC<sub>1-6</sub>alkyl;  
 hydroxyC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxy; hydroxyC<sub>1-6</sub>alkylamino;  
 aminoC<sub>1-6</sub>alkyloxy; di(C<sub>1-6</sub>alkyl)aminocarbonyl; di(hydroxyC<sub>1-6</sub>alkyl)amino;  
 arylC<sub>1-6</sub>alkyl)amino; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyloxy;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkylamino; arylsulfonyl; arylsulfonylamino; aryloxy;  
 arylC<sub>2-6</sub>alkenediyl; di(C<sub>1-6</sub>alkyl)amino;  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 cyano; thiophenyl; thiophenyl substituted with  
 di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl, di(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl,  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl or di(hydroxyC<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl; furanyl;  
 imidazolyl; C<sub>1-6</sub>alkyltriazolyl; tetrazolyl; pyrrolidinyl; piperidinylC<sub>1-6</sub>alkyloxy;  
 morpholinyl; C<sub>1-6</sub>alkylmorpholinyl; morpholinylC<sub>1-6</sub>alkyloxy;  
 morpholinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinyl; C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyloxy;  
 C<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkylpiperazinylsulfonyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyloxy; aminosulfonylpiperazinyl;  
 aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinyl;  
 di(C<sub>1-6</sub>alkyl)aminosulfonylpiperazinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl; C<sub>1-6</sub>alkyloxypiperidinyl;  
 C<sub>1-6</sub>alkyloxypiperidinylC<sub>1-6</sub>alkyl; hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinyl;  
 hydroxyC<sub>1-6</sub>alkyloxyC<sub>1-6</sub>alkylpiperazinylC<sub>1-6</sub>alkyl;  
 (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)amino; (hydroxyC<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl)aminoC<sub>1-6</sub>alkyl;  
 pyrrolidinylC<sub>1-6</sub>alkyloxy; pyrazolyl; thiopyrazolyl; pyrazolyl substituted with two  
 substituents selected from C<sub>1-6</sub>alkyl or trihaloC<sub>1-6</sub>alkyl; pyridinyl; pyridinyl  
 substituted with C<sub>1-6</sub>alkyloxy or aryl; pyrimidinyl; quinolinyl; indole; phenyl; phenyl  
 substituted with one, two or three substituents independently selected from halo,  
 amino, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkyloxy, hydroxyC<sub>1-4</sub>alkyl, trifluoromethyl,  
 trifluoromethyloxy, hydroxyC<sub>1-4</sub>alkyloxy, C<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkyloxy,  
 aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyloxy, di(C<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 piperidinylC<sub>1-4</sub>alkyloxy, pyrrolidinylC<sub>1-4</sub>alkyloxy, aminosulfonylpiperazinyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinyl,  
 di(C<sub>1-4</sub>alkyl)aminosulfonylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkyloxypiperidinyl,  
 C<sub>1-4</sub>alkyloxypiperidinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinyl,  
 hydroxyC<sub>1-4</sub>alkyloxyC<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl,  
 (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)amino, (hydroxyC<sub>1-4</sub>alkyl)(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkyl,  
 pyrrolidinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyloxy, morpholinylC<sub>1-4</sub>alkyl,

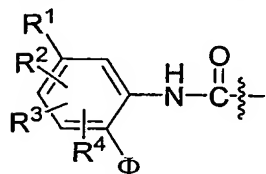
C<sub>1-4</sub>alkylpiperazinyl, C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyloxy,  
 C<sub>1-4</sub>alkylpiperazinylC<sub>1-4</sub>alkyl, hydroxyC<sub>1-4</sub>alkylamino, di(hydroxyC<sub>1-4</sub>alkyl)amino,  
 di(C<sub>1-4</sub>alkyl)aminoC<sub>1-4</sub>alkylamino, aminothiadiazolyl,  
 aminosulfonylpiperazinylC<sub>1-4</sub>alkyloxy, or thiophenylC<sub>1-4</sub>alkylamino.

292. The compound of claim 287 that is selected from one of





wherein the terminal hydroxamic acid moiety (-C(O)-NH-OH) is replaced with



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

293. The compound of claim 287 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

294. A compound according to claim 287 for use in inhibiting histone deacetylase.

295. A compound according to claim 287 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

296. The compound of claim 295, wherein said treatment is effected by inhibiting histone deacetylase.

297. The compound of claim 295, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

298. The compound of claim 295, wherein said cell proliferative disease is cancer.

299. The compound of claim 298, wherein said cancer is a solid tumor cancer.

300. The compound of claim 298, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

301. A pharmaceutical composition comprising a compound according to claim 287 and a pharmaceutically acceptable carrier.

302. The pharmaceutical composition of claim 301 further comprising a nucleic acid level inhibitor of histone deacetylase.

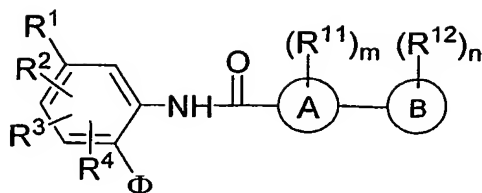
303. The pharmaceutical composition of claim 302, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

304. The pharmaceutical composition of claim 303, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4,



SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

305. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 287.
306. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 301.
307. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 302.
308. The method of claim 306, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
309. The method of claim 306, wherein said cell proliferative disease is cancer.
310. The method of claim 309, wherein said cancer is a solid tumor cancer.
311. The method of claim 310, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
312. The method of claim 307, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
313. The method of claim 30, wherein said cell proliferative disease is cancer.
314. The method of claim 313, wherein said cancer is a solid tumor cancer.
315. The method of claim 314, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
316. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

$\Phi$  is  $-\text{NH}_2$  or  $-\text{OH}$ ;

$\text{R}^1$  is H or as defined in claim 1;

$\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined in claim 1;

**Ring A** is a heterocyclyl, wherein if said heterocyclyl contains an  $-\text{NH}-$  moiety that nitrogen may be optionally substituted by a group selected from G;

$\text{R}^{11}$  is a substituent on carbon and is selected from halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $\text{C}_{1-6}$ alkyl,  $\text{C}_{2-6}$ alkenyl,  $\text{C}_{2-6}$ alkynyl,  $\text{C}_{1-6}$ alkoxy,  $\text{C}_{1-6}$ alkanoyl,  $\text{C}_{1-6}$ alkanoyloxy,  $N$ -( $\text{C}_{1-6}$ alkyl)amino,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ amino,  $\text{C}_{1-6}$ alkanoylamino,  $N$ -( $\text{C}_{1-6}$ alkyl)carbamoyl,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ carbamoyl,  $\text{C}_{1-6}$ alkylS(O) $_a$  wherein  $a$  is 0 to 2,  $\text{C}_{1-6}$ alkoxycarbonyl,  $N$ -( $\text{C}_{1-6}$ alkyl)sulphamoyl,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ sulphamoyl, aryl, aryloxy, aryl $\text{C}_{1-6}$ alkyl, heterocyclic group, (heterocyclic group) $\text{C}_{1-6}$ alkyl or a group (D-E-); wherein  $\text{R}^1$ , including group (D-E-), may be optionally substituted on carbon by one or more V; and wherein, if said heterocyclic group contains an  $-\text{NH}-$  moiety that nitrogen may be optionally substituted by a group selected from J;

V is halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $\text{C}_{1-6}$ alkyl,  $\text{C}_{2-6}$ alkenyl,  $\text{C}_{2-6}$ alkynyl,  $\text{C}_{1-6}$ alkoxy,  $\text{C}_{1-6}$ alkanoyl,  $\text{C}_{1-6}$ alkanoyloxy,  $N$ -( $\text{C}_{1-6}$ alkyl)amino,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ amino,  $\text{C}_{1-6}$ alkanoylamino,  $N$ -( $\text{C}_{1-6}$ alkyl)carbamoyl,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ carbamoyl,  $\text{C}_{1-6}$ alkylS(O) $_a$  wherein  $a$  is 0 to 2,  $\text{C}_{1-6}$ alkoxycarbonyl,  $N$ -( $\text{C}_{1-6}$ alkyl)sulphamoyl,  $N,N$ -( $\text{C}_{1-6}$ alkyl) $_2$ sulphamoyl

or a group (D'-E'-); wherein V, including group (D'-E'-), may be optionally substituted on carbon by one or more W;

W and Z are independently selected from halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkanoyl, C<sub>1-6</sub>alkanoyloxy, N-(C<sub>1-6</sub>alkyl)amino, N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>amino, C<sub>1-6</sub>alkanoylamino, N-(C<sub>1-6</sub>alkyl)carbamoyl, N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>alkoxycarbonyl, N-(C<sub>1-6</sub>alkyl)sulphamoyl or N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>sulphamoyl;

G, J and K are independently selected from C<sub>1-8</sub>alkyl, C<sub>2-8</sub>alkenyl, C<sub>2-8</sub>alkynyl, C<sub>1-8</sub>alkanoyl, C<sub>1-8</sub>alkylsulphonyl, C<sub>1-8</sub>alkoxycarbonyl, carbamoyl, N-(C<sub>1-8</sub>alkyl)carbamoyl, N,N-(C<sub>1-8</sub>alkyl)carbamoyl, benzyloxycarbonyl, benzoyl and phenylsulphonyl, aryl, arylC<sub>1-6</sub>alkyl or (heterocyclic group)C<sub>1-6</sub>alkyl; wherein G, J and K may be optionally substituted on carbon by one or more Q; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from hydrogen or C<sub>1-6</sub>alkyl;

Q is halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkanoyl, C<sub>1-6</sub>alkanoyloxy, N-(C<sub>1-6</sub>alkyl)amino, N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>amino, C<sub>1-6</sub>alkanoylamino, N-(C<sub>1-6</sub>alkyl)carbamoyl, N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>alkoxycarbonyl, C<sub>1-6</sub>alkoxycarbonylamino, N-(C<sub>1-6</sub>alkyl)sulphamoyl, N,N-(C<sub>1-6</sub>alkyl)<sub>2</sub>sulphamoyl, aryl, aryloxy, arylC<sub>1-6</sub>alkyl, arylC<sub>1-6</sub>alkoxy, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>alkyl, (heterocyclic group)C<sub>1-6</sub>alkoxy, or a group (D''-E''); wherein Q, including group (D''-E''), may be optionally substituted on carbon by one or more Z;

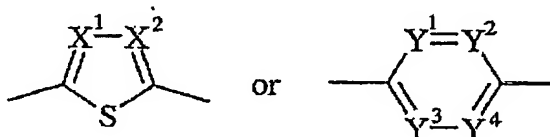
D, D' and D'' are independently selected from C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>3-8</sub>cycloalkyl, C<sub>3-8</sub>cycloalkylC<sub>1-6</sub>alkyl, aryl, arylC<sub>1-6</sub>alkyl, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>alkyl; wherein D, D' and D'' may be optionally substituted on carbon by one or more F'; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from K;

E, E' and E'' are independently selected from -N(R<sup>a</sup>)-, -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -N(R<sup>a</sup>)C(O)N(R<sup>b</sup>)-, -N(R<sup>a</sup>)C(O)O-, -OC(O)N(R<sup>a</sup>)-, -C(O)N(R<sup>a</sup>)-, -S(O)<sub>r</sub>-, -SO<sub>2</sub>N(R<sup>a</sup>)-, -N(R<sup>a</sup>)SO<sub>2</sub>-; wherein R<sup>a</sup> and R<sup>b</sup> are independently selected from hydrogen or C<sub>1-6</sub>alkyl optionally substituted by one or more F and r is 0-2;

F and F' are independently selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkanoyl, C<sub>1-6</sub>alkanoyloxy, *N*-(C<sub>1-6</sub>alkyl)amino, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>amino, C<sub>1-6</sub>alkanoylamino, *N*-(C<sub>1-6</sub>alkyl)carbamoyl, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>alkoxycarbonyl, *N*-(C<sub>1-6</sub>alkyl)sulphamoyl and *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>sulphamoyl;

m is 0, 1, 2, 3 or 4; wherein the values of R<sup>1</sup> may be the same or different;

Ring B is a ring selected from



wherein,

X<sup>1</sup> and X<sup>2</sup> are selected from CH or N, and

Y<sup>1</sup>, Y<sup>2</sup>, Y<sup>3</sup> and Y<sup>4</sup> are selected from CH or N provided that at least one of Y<sup>1</sup>, Y<sup>2</sup>, Y<sup>3</sup> and Y<sup>4</sup> is N;

R<sup>12</sup> is halo;

n is 0, 1, or 2, wherein the values of R<sup>12</sup> are the same or different.

317. The compound of claim 316 wherein

- Ring A is a pyridyl, quinolyl, indolyl, pyrimidinyl, morpholinyl, piperidinyl, piperazinyl, pyridazinyl, pyrazinyl, thiazolyl, thienyl, thienopyrimidinyl, thienopyridinyl, purinyl, 1',2',3',6'-tetrahydropyridinyl, triazinyl, oxazolyl, pyrazolyl, or furanyl; wherein if Ring A contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from G.
- Ring B is thienyl, thiadiazolyl, thiazolyl, pyrimidyl, pyrazinyl, pyridazinyl or pyridyl.
- or
- Ring B is thienyl or pyridyl wherein both the thienyl and the pyridyl are attached to Ring A in the 2-position of the thienyl or pyridyl ring and to the amide group of formula (I) in the 5-position of the thienyl or pyridyl ring.

- $R^{11}$  is halo, amino,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $C_{1-3}$ alkanoyloxy,  $N$ -( $C_{1-3}$ alkyl)amino,  $N,N$ -( $C_{1-3}$ alkyl)<sub>2</sub>amino,  $C_{1-3}$ alkanoylamino,  $N$ -( $C_{1-3}$ alkyl)carbamoyl,  $N,N$ -( $C_{1-3}$ alkyl)<sub>2</sub>carbamoyl.
- or
- $R^{11}$  is a substituent on carbon and is selected from halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkanoyl,  $C_{1-6}$ alkanoyloxy,  $N$ -( $C_{1-6}$ alkyl)amino,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>amino,  $C_{1-6}$ alkanoylamino,  $N$ -( $C_{1-6}$ alkyl)carbamoyl,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>carbamoyl,  $C_{1-6}$ alkylS(O)<sub>a</sub> wherein a is 0 to 2,  $C_{1-6}$ alkoxycarbonyl,  $N$ -( $C_{1-6}$ alkyl)sulphamoyl,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>sulphamoyl, aryl, aryloxy, aryl $C_{1-6}$ alkyl, heterocyclic group, (heterocyclic group) $C_{1-6}$ alkyl or a group (D-E-); wherein  $R^1$ , including group (D-E-), may be optionally substituted on carbon by one or more V; and wherein, if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from J;

V is halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkanoyl,  $C_{1-6}$ alkanoyloxy,  $N$ -( $C_{1-6}$ alkyl)amino,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>amino,  $C_{1-6}$ alkanoylamino,  $N$ -( $C_{1-6}$ alkyl)carbamoyl,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>carbamoyl,  $C_{1-6}$ alkylS(O)<sub>a</sub> wherein a is 0 to 2,  $C_{1-6}$ alkoxycarbonyl,  $N$ -( $C_{1-6}$ alkyl)sulphamoyl,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>sulphamoyl or a group (D'-E'-); wherein V, including group (D'-E'-), may be optionally substituted on carbon by one or more W;

W and Z are independently selected from halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{2-6}$ alkynyl,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkanoyl,  $C_{1-6}$ alkanoyloxy,  $N$ -( $C_{1-6}$ alkyl)amino,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>amino,  $C_{1-6}$ alkanoylamino,  $N$ -( $C_{1-6}$ alkyl)carbamoyl,  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>carbamoyl,  $C_{1-6}$ alkylS(O)<sub>a</sub> wherein a is 0 to 2,  $C_{1-6}$ alkoxycarbonyl,  $N$ -( $C_{1-6}$ alkyl)sulphamoyl or  $N,N$ -( $C_{1-6}$ alkyl)<sub>2</sub>sulphamoyl;

G, J and K are independently selected from C<sub>1-8</sub>alkyl, C<sub>2-8</sub>alkenyl, C<sub>2-8</sub>alkynyl, C<sub>1-8</sub>alkanoyl, C<sub>1-8</sub>alkylsulphonyl, C<sub>1-8</sub>alkoxycarbonyl, carbamoyl, *N*-(C<sub>1-8</sub>alkyl)carbamoyl, *N,N*-(C<sub>1-8</sub>alkyl)carbamoyl, benzyloxycarbonyl, benzoyl and phenylsulphonyl, aryl, arylC<sub>1-6</sub>alkyl or (heterocyclic group)C<sub>1-6</sub>alkyl; wherein G, J and K may be optionally substituted on carbon by one or more Q; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from hydrogen or C<sub>1-6</sub>alkyl;

Q is halo, nitro, cyano, hydroxy, oxo, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkanoyl, C<sub>1-6</sub>alkanoyloxy, *N*-(C<sub>1-6</sub>alkyl)amino, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>amino, C<sub>1-6</sub>alkanoylamino, *N*-(C<sub>1-6</sub>alkyl)carbamoyl, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>alkoxycarbonyl, C<sub>1-6</sub>alkoxycarbonylamino, *N*-(C<sub>1-6</sub>alkyl)sulphamoyl, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>sulphamoyl, aryl, aryloxy, arylC<sub>1-6</sub>alkyl, arylC<sub>1-6</sub>alkoxy, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>alkyl, (heterocyclic group)C<sub>1-6</sub>alkoxy, or a group (D''-E''); wherein Q, including group (D''-E''), may be optionally substituted on carbon by one or more Z;

D, D' and D'' are independently selected from C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>3-8</sub>cycloalkyl, C<sub>3-8</sub>cycloalkylC<sub>1-6</sub>alkyl, aryl, arylC<sub>1-6</sub>alkyl, heterocyclic group, (heterocyclic group)C<sub>1-6</sub>alkyl; wherein D, D' and D'' may be optionally substituted on carbon by one or more F'; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from K;

E, E' and E'' are independently selected from -N(R<sup>a</sup>)-, -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -N(R<sup>a</sup>)C(O)N(R<sup>b</sup>)-, -N(R<sup>a</sup>)C(O)O-, -OC(O)N(R<sup>a</sup>)-, -C(O)N(R<sup>a</sup>)-, -S(O)<sub>r</sub>-, -SO<sub>2</sub>N(R<sup>a</sup>)-, -N(R<sup>a</sup>)SO<sub>2</sub>-; wherein R<sup>a</sup> and R<sup>b</sup> are independently selected from hydrogen or C<sub>1-6</sub>alkyl optionally substituted by one or more F and r is 0-2; and

F and F' are independently selected from halo, nitro, cyano, hydroxy, trifluoromethyl, trifluoromethoxy, amino, carboxy, carbamoyl, mercapto, sulphamoyl, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>1-6</sub>alkoxy, C<sub>1-6</sub>alkanoyl, C<sub>1-6</sub>alkanoyloxy, *N*-(C<sub>1-6</sub>alkyl)amino, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>amino, C<sub>1-6</sub>alkanoylamino, *N*-(C<sub>1-6</sub>alkyl)carbamoyl, *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>carbamoyl, C<sub>1-6</sub>alkylS(O)<sub>a</sub> wherein a is 0 to 2, C<sub>1-6</sub>alkoxycarbonyl, *N*-(C<sub>1-6</sub>alkyl)sulphamoyl and *N,N*-(C<sub>1-6</sub>alkyl)<sub>2</sub>sulphamoyl.

• m is 0, 1, 2, 3 or 4; wherein the values of R<sup>11</sup> are the same or different.

- R<sup>12</sup> is halo.
- n is 0, 1, or 2; wherein the values of R<sup>12</sup> are the same or different;

318. The compound of claim 317 wherein

- Ring A is pyridin-4-yl, pyridin-3-yl, pyridin-2-yl, quinolin-8-yl, pyrimidin-6-yl, pyrimidin-5-yl, pyrimidin-4-yl, morpholin-4-yl, piperidin-4-yl, piperidin-3-yl, piperidin-2-yl, piperazin-4-yl, pyridazin-5-yl, pyrazin-6-yl, thiazol-2-yl, thien-2-yl, thieno[3,2d]pyrimidinyl, thieno[3,2b]pyrimidinyl, thieno[3,2b]pyridinyl, purin-6-yl, 1',2',3',6'-tetrahydropyridin-4-yl or triazin-6-yl; wherein if Ring A contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from G.

Ring B is thienyl, thiazolyl, pyrimidyl, pyrazinyl, pyridazinyl or pyridyl.

- R<sup>11</sup> is halo, amino, C<sub>1-6</sub>alkyl or C<sub>1-6</sub>alkoxy.

319. The compound of claim 317 wherein

Ring A is pyridin-4-yl, pyridin-3-yl, pyridin-2-yl, morpholin-4-yl, piperidin-4-yl, piperidin-3-yl, piperidin-2-yl, piperazin-4-yl, thiazol-2-yl, thien-2-yl, furan-3-yl, pyrrolidin-1-yl, piperidin-1-yl, triazol-1-yl or 1',2',3',6'-tetrahydropyridin-4-yl wherein if Ring A contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from G.

- Ring B is thienyl or pyridyl.
- R<sup>11</sup> is halo, amino, methyl or methoxy.

320. The compound of claim 317 wherein

Ring A is a pyridyl, pyrimidyl, morpholinyl, piperidinyl, piperazinyl, pyridazinyl, thienyl, pyrazinyl, thiazolyl, 1,2,4-triazolyl or furanyl.

321. The compound of claim 317 wherein

Ring A is pyridin-4-yl, pyridin-3-yl, pyridin-2-yl or 1,2,4-triazolyl.

322. The compound of claim 317 wherein

$R^{11}$  substituent on carbon and is selected from cyano, hydroxy,  $C_{1-6}$ alkyl or a group (D-E-); where  $R^{11}$  including group E-, may be optionally substituted on carbon by one or more V;

V is cyano, hydroxy or a group (D'-E'-); wherein V, including group (D'-E'-), may be optionally substituted on carbon by one or more W;

W and Z are independently selected from cyano,  $C_{1-6}$ alkyl or  $C_{1-6}$ alkoxy;

G and K are independently selected from  $C_{1-8}$ alkyl,  $C_{2-8}$ alkenyl,  $C_{2-8}$ alkynyl, aryl $C_{1-6}$ alkyl or (heterocyclic group) $C_{1-6}$ alkyl; wherein G and K may be optionally substituted on carbon by one or more Q;

Q is cyano, hydroxy, oxo,  $C_{1-6}$ alkyl,  $C_{2-6}$ alkenyl,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkanoyl,  $C_{1-6}$ alkanoyloxy, *N*-( $C_{1-6}$ alkyl)carbamoyl, *N,N*-( $C_{1-6}$ alkyl)<sub>2</sub>carbamoyl,  $C_{1-6}$ alkoxycarbonyl,  $C_{1-6}$ alkoxycarbonylamino, aryl, aryloxy or a group (D''-E''); wherein Q, including group (D''-E''), may be optionally substituted on carbon by one or more Z;

D, D' and D'' are independently selected from aryl, aryl $C_{1-6}$ alkyl or heterocyclic group; wherein D, D' and D'' may be optionally substituted on carbon by one or more F'; and wherein if said heterocyclic group contains an -NH- moiety that nitrogen may be optionally substituted by a group selected from K;

E, E' and E'' are independently selected from -O-, -C(O)O-, -OC(O)-, -C(O)-, -N(R<sup>a</sup>)C(O)-, -C(O)N(R<sup>a</sup>)-, -S(O)<sub>r</sub>-; wherein R<sup>a</sup> is selected from hydrogen or  $C_{1-6}$ alkyl optionally substituted by one or more F and r is 0-2; and

F and F' are independently selected from nitro, hydroxy,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkanoyl, *N*-( $C_{1-6}$ alkyl)amino, *N,N*-( $C_{1-6}$ alkyl)<sub>2</sub>amino,  $C_{1-6}$ alkanoylamino or  $C_{1-6}$ alkoxycarbonyl.

323. The compound of claim 317 wherein  $R^{12}$  is fluoro.
324. The compound of claim 317 wherein  $R^{12}$  is chloro.
325. The compound of claim 316 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 316 wherein:



Ring A is a pyridyl, indolyl, pyrimidyl, morpholinyl, piperidinyl, piperazinyl, pyridazinyl, thienyl, pyrazinyl, thiazolyl, oxazolyl, 1,2,4-triazolyl, isoxazolyl, isothiazolyl, pyrazolyl, or furanyl;

Ring B is thienyl, thiadiazolyl, thiazolyl, pyrimidyl, pyrazinyl, pyridazinyl or pyridyl;

$R^{11}$  is halo, amino,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $C_{1-3}$ alkanoyloxy,  $N$ -( $C_{1-3}$ alkyl)amino,

$N,N$ -( $C_{1-3}$ alkyl) $_2$ amino,  $C_{1-3}$ alkanoylamino,  $N$ -( $C_{1-3}$ alkyl)carbamoyl,

$N,N$ -( $C_{1-3}$ alkyl) $_2$ carbamoyl;

$m$  is 0, 1, 2, wherein the values of  $R^{11}$  are the same or different.

$n$  is 0, 1, 2, wherein the values of  $R^{12}$  are the same or different;

$R^{12}$  is F or Cl.

326. The compound of claim 316 wherein each of  $R^2$ ,  $R^3$ , and  $R^4$  corresponds to  $R^{12}$ ,  $R^{13}$ , and  $R^{14}$ , respectively, in claim 316 wherein:

Ring A is pyridin-4-yl, pyridin-3-yl, pyridin-2-yl or 1,2,4-triazolyl;

Ring B is thienyl or pyridyl;

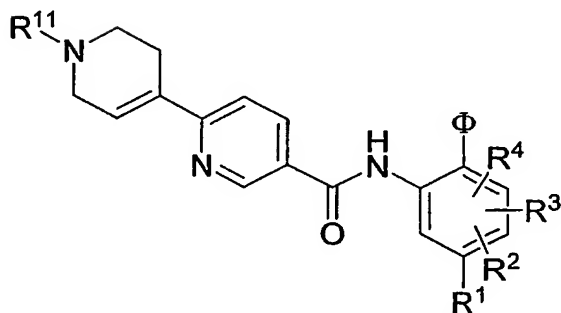
$R^{11}$  is halo, amino, methyl or methoxy;

$m$  is 0, 1, 2, wherein the values of  $R^{11}$  are the same or different.

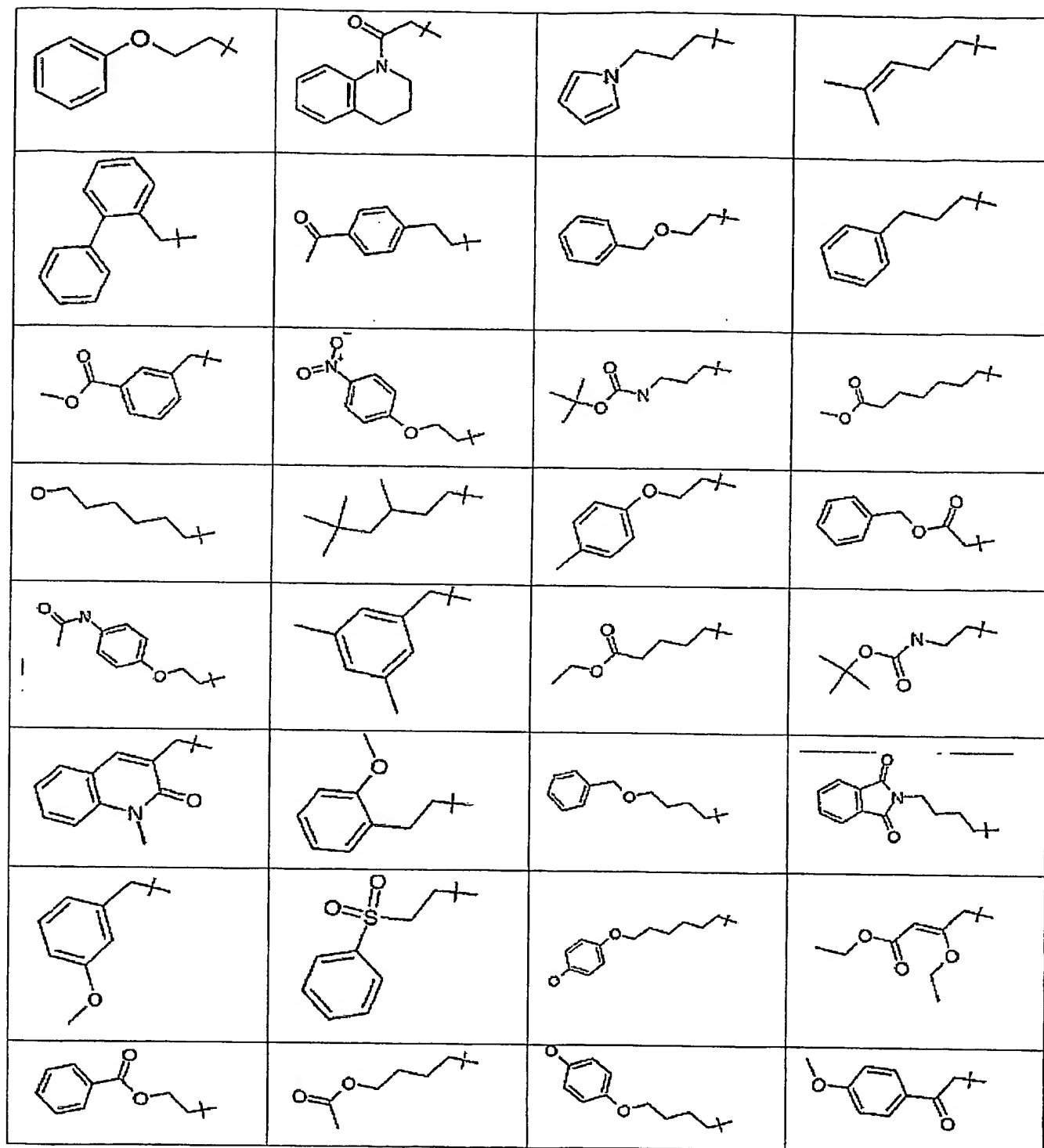
$n$  is 0 or 1;

$R^{12}$  is F.

327. The compound of claim 316 that is



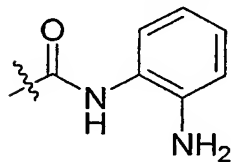
wherein  $R^{11}$  is selected from one of:



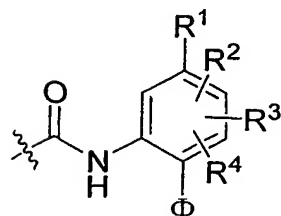
and			

328. The compound of claim 316 wherein  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

329. The compound of claim 316 that is selected from one of the compounds of WO 03/024448 wherein the terminal moieties  $-C(O)-NH-Ay^1$ ,  $-C(O)-NH-Ay^2$ ,  $-C(O)-NH-Ar^a-NH_2$ , and



are replaced with the moiety:



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

330. A compound according to claim 316 for use in inhibiting histone deacetylase.

331. A compound according to claim 316 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

332. The compound of claim 331, wherein said treatment is effected by inhibiting histone deacetylase.

334. The compound of claim 331, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

335. The compound of claim 331, wherein said cell proliferative disease is cancer.

336. The compound of claim 335, wherein said cancer is a solid tumor cancer.

337. The compound of claim 335, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

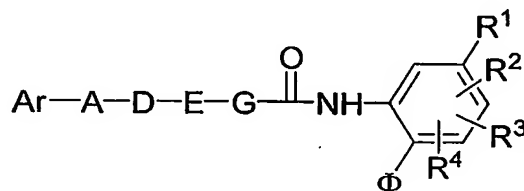
338. A pharmaceutical composition comprising a compound according to claim 316 and a pharmaceutically acceptable carrier.

339. The pharmaceutical composition of claim 338 further comprising a nucleic acid level inhibitor of histone deacetylase.

340. The pharmaceutical composition of claim 339, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

341. The pharmaceutical composition of claim 340, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

342. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 316.
343. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 338.
344. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 339.
345. The method of claim 343, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
346. The method of claim 343, wherein said cell proliferative disease is cancer.
347. The method of claim 346, wherein said cancer is a solid tumor cancer.
348. The method of claim 347, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
349. The method of claim 344, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
350. The method of claim 344, wherein said cell proliferative disease is cancer.
351. The method of claim 350, wherein said cancer is a solid tumor cancer.
352. The method of claim 351, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
353. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

$\Phi$  is  $-\text{NH}_2$  or  $-\text{OH}$ ;

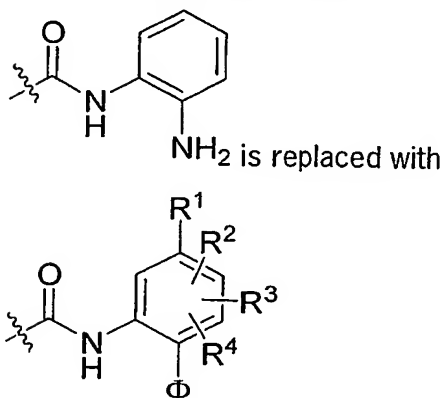
$R^1$  is H or as defined in claim 1;

$R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1; and

Ar, A, D, E, and G are as defined in JP 2003137866.

354. The compound of claim 353 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

355. The compound of claim 353 that is selected from one of the compounds of JP 2003137866 wherein the terminal moiety:



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

356. A compound according to claim 353 for use in inhibiting histone deacetylase.

357. A compound according to claim 353 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

358. The compound of claim 357, wherein said treatment is effected by inhibiting histone deacetylase.

359. The compound of claim 357, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

360. The compound of claim 357, wherein said cell proliferative disease is cancer.

361. The compound of claim 360, wherein said cancer is a solid tumor cancer.

362. The compound of claim 360, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

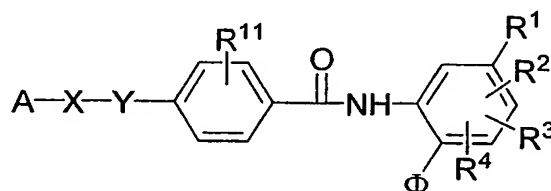
363. A pharmaceutical composition comprising a compound according to claim 353 and a pharmaceutically acceptable carrier.

364. The pharmaceutical composition of claim 363 further comprising a nucleic acid level inhibitor of histone deacetylase.

365. The pharmaceutical composition of claim 364, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
366. The pharmaceutical composition of claim 365, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
367. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 353.
368. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 363.
369. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 364.
370. The method of claim 368, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
371. The method of claim 368, wherein said cell proliferative disease is cancer.
372. The method of claim 371, wherein said cancer is a solid tumor cancer.
373. The method of claim 372, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
374. The method of claim 369, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
375. The method of claim 369, wherein said cell proliferative disease is cancer.
376. The method of claim 375, wherein said cancer is a solid tumor cancer.

377. The method of claim 376, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

378. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

$\Phi$  is  $-\text{NH}_2$  or  $-\text{OH}$ ;

$\text{R}^1$  is H or as defined in claim 1;

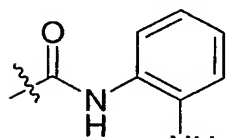
$\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined in claim 1;

X, Y, and A are as defined in JP 11-269146 (1999); and

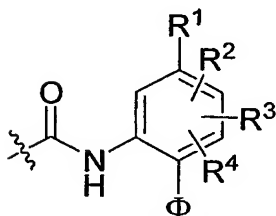
$\text{R}^{11}$  is the same as  $\text{R}^1$  of JP 11-269146 (1999).

379. The compound of claim 378 wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are all H.

380. The compound of claim 378 that is selected from one of the compounds 1-50 of Tables 2-4 of JP 11-269146 (1999) wherein the terminal moiety:



$\text{NH}_2$  is replaced with the moiety:



wherein  $\Phi$ ,  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined in accordance with claim 1.

381. A compound according to claim 378 for use in inhibiting histone deacetylase.

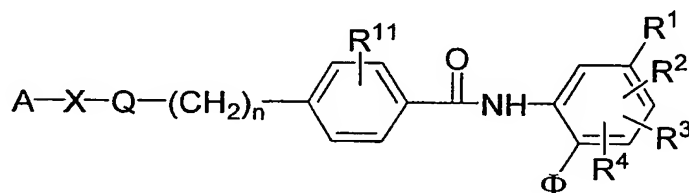
382. A compound according to claim 378 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

383. The compound of claim 382, wherein said treatment is effected by inhibiting histone deacetylase.



384. The compound of claim 382, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
385. The compound of claim 382, wherein said cell proliferative disease is cancer.
386. The compound of claim 385, wherein said cancer is a solid tumor cancer.
387. The compound of claim 385, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
388. A pharmaceutical composition comprising a compound according to claim 378 and a pharmaceutically acceptable carrier.
389. The pharmaceutical composition of claim 388 further comprising a nucleic acid level inhibitor of histone deacetylase.
390. The pharmaceutical composition of claim 389, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
391. The pharmaceutical composition of claim 390, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
392. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 378.
393. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 388.
394. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 389.
395. The method of claim 393, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

396. The method of claim 393, wherein said cell proliferative disease is cancer.
397. The method of claim 396, wherein said cancer is a solid tumor cancer.
398. The method of claim 397, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
399. The method of claim 394, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
400. The method of claim 394, wherein said cell proliferative disease is cancer.
401. The method of claim 400, wherein said cancer is a solid tumor cancer.
402. The method of claim 401, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
403. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is -NH<sub>2</sub> or -OH;

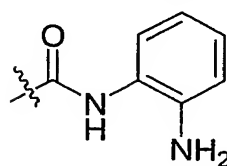
R<sup>1</sup> is H or as defined in claim 1;

R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1;

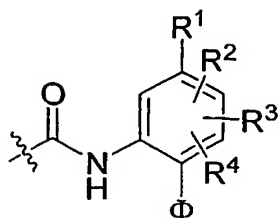
n, X, Q, and A are as defined in JP 11-302173 (1999); and

R<sup>11</sup> is the same as R<sup>1</sup> of JP 11-302173 (1999).

404. The compound of claim 403 wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are all H.
405. The compound of claim 403 that is selected from one of the compounds 1-67 of JP 11-302173 (1999) wherein the terminal moiety:



NH<sub>2</sub> is replaced with the moiety



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

406. A compound according to claim 403 for use in inhibiting histone deacetylase.

407. A compound according to claim 403 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

408. The compound of claim 407, wherein said treatment is effected by inhibiting histone deacetylase.

409. The compound of claim 407, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

410. The compound of claim 407, wherein said cell proliferative disease is cancer.

411. The compound of claim 410, wherein said cancer is a solid tumor cancer.

412. The compound of claim 410, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

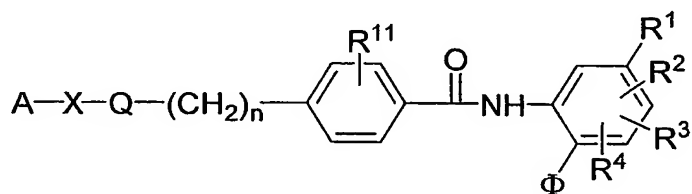
413. A pharmaceutical composition comprising a compound according to claim 403 and a pharmaceutically acceptable carrier.

414. The pharmaceutical composition of claim 413 further comprising a nucleic acid level inhibitor of histone deacetylase.

415. The pharmaceutical composition of claim 414, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

416. The pharmaceutical composition of claim 415, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

417. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 403.
418. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 413.
419. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 414.
420. The method of claim 418, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
421. The method of claim 418, wherein said cell proliferative disease is cancer.
422. The method of claim 421, wherein said cancer is a solid tumor cancer.
423. The method of claim 422, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
424. The method of claim 419, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
425. The method of claim 419, wherein said cell proliferative disease is cancer.
426. The method of claim 425, wherein said cancer is a solid tumor cancer.
427. The method of claim 426, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
428. A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein

$\Phi$  is  $\text{-NH}_2$  or  $\text{-OH}$ ;

$R^1$  is H or as defined in claim 1;

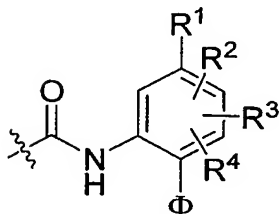
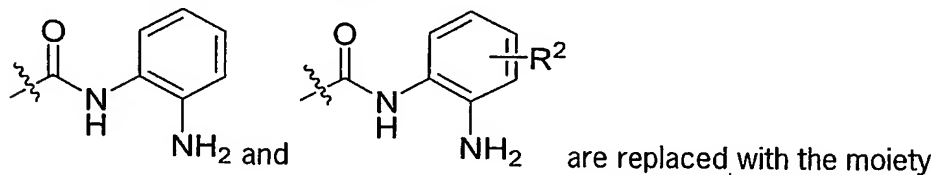
$R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1;

$n$ ,  $Q$ , and  $A$  are as defined in JP 2001131130; and

$R^{11}$  is the same as  $R^1$  of JP 2001131130.

429. The compound of claim 428 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

430. The compound of claim 428 that is selected from one of the compounds of JP 2001131130 wherein the terminal moieties



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

431. A compound according to claim 428 for use in inhibiting histone deacetylase.

432. A compound according to claim 428 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

433. The compound of claim 432, wherein said treatment is effected by inhibiting histone deacetylase.

434. The compound of claim 432, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

435. The compound of claim 432, wherein said cell proliferative disease is cancer.

436. The compound of claim 435, wherein said cancer is a solid tumor cancer.

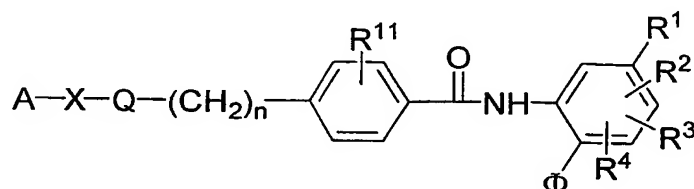
437. The compound of claim 435, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

438. A pharmaceutical composition comprising a compound according to claim 428 and a pharmaceutically acceptable carrier.

439. The pharmaceutical composition of claim 438 further comprising a nucleic acid level inhibitor of histone deacetylase.
440. The pharmaceutical composition of claim 439, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
441. The pharmaceutical composition of claim 440, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
442. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 428.
443. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 438.
444. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 439.
445. The method of claim 443, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
446. The method of claim 443, wherein said cell proliferative disease is cancer.
447. The method of claim 446, wherein said cancer is a solid tumor cancer.
448. The method of claim 447, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
449. The method of claim 444, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
450. The method of claim 444, wherein said cell proliferative disease is cancer.
451. The method of claim 450, wherein said cancer is a solid tumor cancer.

452. The method of claim 451, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

453. A compound of formula:



or a pharmaceutically acceptable salt thereof, wherein

Φ is  $-NH_2$  or  $-OH$ ;

$R^1$  is H or as defined in claim 1;

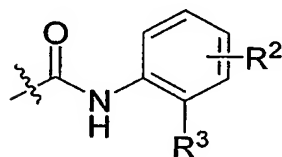
$R^2$ ,  $R^3$ , and  $R^4$  are as defined in claim 1;

n, X, Q, and A are as defined in JP 10152462, JP 2002332267, and JP 11-302173; and

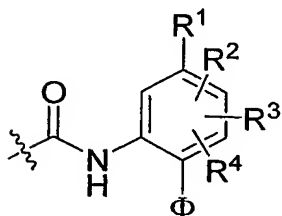
$R^{11}$  is the same as  $R^1$  of JP 10152462, JP 2002332267, and JP 11-302173.

454. The compound of claim 453 wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are all H.

455. The compound of claim 453 that is selected from one of the compounds of JP 10152462, JP 2002332267, and JP 11-302173 wherein the terminal moiety



is replaced with the moiety:



wherein Φ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with claim 1.

456. A compound according to claim 453 for use in inhibiting histone deacetylase.

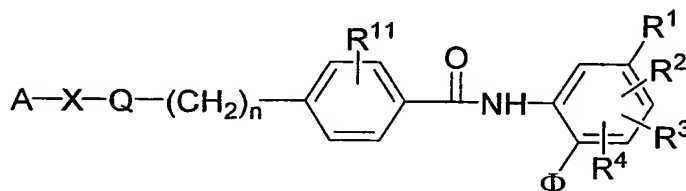
457. A compound according to claim 453 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

458. The compound of claim 457 wherein said treatment is effected by inhibiting histone deacetylase.

459. The compound of claim 457, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
460. The compound of claim 457, wherein said cell proliferative disease is cancer.
461. The compound of claim 460, wherein said cancer is a solid tumor cancer.
462. The compound of claim 460, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
463. A pharmaceutical composition comprising a compound according to claim 453 and a pharmaceutically acceptable carrier.
464. The pharmaceutical composition of claim 463 further comprising a nucleic acid level inhibitor of histone deacetylase.
465. The pharmaceutical composition of claim 464, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.
466. The pharmaceutical composition of claim 465, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4, SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.
467. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 453.
468. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 463.
469. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 464.
470. The method of claim 468, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

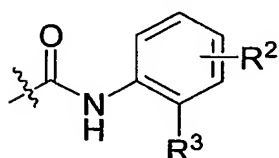


471. The method of claim 468, wherein said cell proliferative disease is cancer.
472. The method of claim 471, wherein said cancer is a solid tumor cancer.
473. The method of claim 472, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
474. The method of claim 469, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
475. The method of claim 469, wherein said cell proliferative disease is cancer.
476. The method of claim 475, wherein said cancer is a solid tumor cancer.
477. The method of claim 476, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
478. A compounds of the formula:

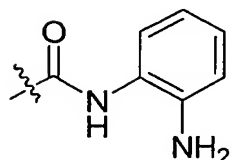


or a pharmaceutically acceptable salt thereof, wherein

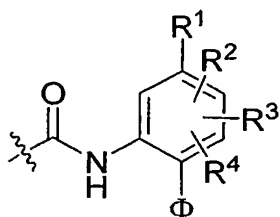
- $\Phi$  is  $-\text{NH}_2$  or  $-\text{OH}$ ;
- $\text{R}^1$  is H or as defined in claim 1;
- $\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined in claim 1;
- $n$ ,  $X$ ,  $Q$ , and  $A$  are as defined in US 6,174,905; and
- $\text{R}^{11}$  is the same as  $\text{R}^1$  of US 6,174,905.
479. The compound of claim 478 wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are all H.
480. The compound of claim 478 that is selected from one of the compounds of US 6,174,905 wherein the terminal moiety:



of the compounds of Table 1 of US 6,174,905 and the terminal moiety:



of the compounds of Tables 2-4 of US 6,174,905 are replaced with the moiety:



wherein  $\Phi$ ,  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined in accordance with paragraph claim 1.

481. A compound according to claim 478 for use in inhibiting histone deacetylase.

482. A compound according to claim 478 for use in treatment of a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease.

483. The compound of claim 482, wherein said treatment is effected by inhibiting histone deacetylase.

484. The compound of claim 482, wherein said cell proliferative disease is a neoplastic cell proliferative disease.

485. The compound of claim 482, wherein said cell proliferative disease is cancer.

486. The compound of claim 485, wherein said cancer is a solid tumor cancer.

487. The compound of claim 485, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.

488. A pharmaceutical composition comprising a compound according to claim 478 and a pharmaceutically acceptable carrier.

489. The pharmaceutical composition of claim 488 further comprising a nucleic acid level inhibitor of histone deacetylase.

490. The pharmaceutical composition of claim 489, wherein said nucleic acid level inhibitor is an antisense oligonucleotide complementary to a nucleic acid that encodes for a histone deacetylase.

491. The pharmaceutical composition of claim 490, wherein said antisense oligonucleotide is selected from the group consisting of SEQ ID No:1, SEQ ID No:2, SEQ ID No:3, SEQ ID No:4,

SEQ ID No:5, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10, SEQ ID No:11, SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, and SEQ ID No:17.

492. A method of inhibiting histone deacetylase, the method comprising contacting said histone deacetylase with an inhibiting effective amount of a compound according to claim 478.
493. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 488.
494. A method of treating an individual having a disease selected from the group consisting of a cell proliferative disease, a protozoal disease and a fungal disease, said method comprising administering to said individual a treatment effective amount of the pharmaceutical composition of claim 489.
495. The method of claim 493, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
496. The method of claim 493, wherein said cell proliferative disease is cancer.
497. The method of claim 496, wherein said cancer is a solid tumor cancer.
498. The method of claim 497, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
499. The method of claim 494, wherein said cell proliferative disease is a neoplastic cell proliferative disease.
500. The method of claim 494, wherein said cell proliferative disease is cancer.
501. The method of claim 500, wherein said cancer is a solid tumor cancer.
502. The method of claim 501, wherein said cancer is selected from the group consisting of a lymphoma, lung cancer, colon cancer, prostate cancer, stomach cancer, breast cancer and leukemia.
503. A compound selected from the compounds of Table 1 and Table 1a and pharmaceutically acceptable salts thereof.